

## Inside Dope

By GEORGE  
F. TAUBENECK



Learn to live and laugh —  
thus delay your epitaph

Stories of the Week  
Gags of the Week  
Expensive Advertising  
Trouble Ahead?  
Good News, for a  
Change!  
Security Without  
Bankruptcy

### Stories of the Week

Those "air coaches" which provide low-cost fast travel have been stripped down to bare essentials in order to accommodate many more passengers.

Thus it is that the "head," or rest room, often has a waiting line.

Pilots have figured out a cute trick. When they need to use the accommodations located behind the door marked "Gentlemen," they flash on the sign which warns:

"Fasten Seat Belts."

"What's that thing crawling up the wall?"

"Uh, it's a Lady Bug."

"Gad! What remarkable eyesight!"

### Gags of the Week

A female politician asserts that women have cleaner minds than men.

We'll go along with that postulate—recalling how frequently women change them.

"Good times are when you accumulate debts you're unable to pay in bad times."—*Lapeer County (Mich.) Press.*

"Next to being young and pretty, the best bet is to be old and rich."—WILLIAM FEATHER.

"If Patrick Henry thought taxation without representation was bad, he should see it with representation."—*United Mine Workers Journal.*

"Translators at the UN are censoring Russia's Andrei Vishinsky in repeating his speeches. They claim what Vishinsky's been saying about the West is unprintable."—*Daily Telegraph, London.*

"The news that Joe had lost his job got around quickly, and a nosey friend asked: 'Why did the foreman fire you?'"

"You know what a foreman is," Joe shrugged, "the one who stands around and watches the other men work."

"What's that got to do with it?" his friend wanted to know.

"Well, he just got jealous of me," Joe explained. "People

(Concluded on Page 12, Col. 1)

# HEAT WAVE MAY RESULT IN UNIT SHORTAGES

## Appliance Price Rises Seen as Steel Goes Up

DETROIT — Price increases on major appliances were seen in the offing as the result of steel price boosts put into effect last week.

United States Steel Corp. announced price hikes averaging \$7.35 a ton after the 15-cent-an-hour wage increase settlement with the C.I.O. United Steelworkers. It was expected that other steel producers would follow U. S. Steel's lead.

The price of cold rolled sheets, a type used by the appliance industry, was raised \$7.50 a ton—from \$99 to \$106.50.

U. S. Steel upped prices on (Concluded on Back Page, Col. 4)

## Ask Copeland Workers To Forego Vacations To Handle Backlog

SIDNEY, Ohio—Copeland Refrigeration Corp. has asked 1,600 employees to forego their annual vacations to help the firm, which manufactures refrigeration compressors and condensing units, to meet pressing delivery schedules.

"Traditionally," stated Frank J. Gleason, executive vice president, "Copeland each year closes its doors the first two weeks of August. But because of a rush of current orders and steadily (Concluded on Page 4, Col. 4)

## 'Do It Yourself' Sale Doesn't Cool Hot Buyer

DETROIT—Editorial staff members who work into the night get all manner of weird calls—many of them seeking service or other assistance on air conditioning or refrigeration equipment—and they pile up during a heat wave. Usual procedure is to refer such callers to a number of good service firms.

One call during the recent heat wave had a new twist, however.

"Say," said the voice, "could you give a feller a hand? When I bought this cooler from (naming a mail order house) they said I could put it together in 15 minutes, but I can't figure the darned thing out. Too dang many parts. I'd sure like to have 'er workin' tonight."

## Laurel Products To Make Units

LAUREL, Miss. — Organization of Laurel Products, Inc., to manufacture and assemble refrigeration units, has just been announced here by W. M. Tittle, president.

Other officers are J. Y. Downing, Jr., vice president and general manager, and C. H. Westphalen, secretary-treasurer.

Capitalized at \$200,000, the new enterprise is financed by local businessmen.

"Refrigeration units will be sold to other manufacturers for (Concluded on Page 4, Col. 5)

## Industry Divided on Advantages of B.t.u. Ratings for Air Conditioners

By George M. Hanning

CHICAGO—Would rating room air conditioners by British thermal units rather than by horsepower or tonnage in advertising be helpful to sales?

Dealers, distributors, and manufacturers, interviewed by the NEWS during the home furnishings market here last month, rendered a "split decision"

Those who felt the idea lacked merit argued principally that B.t.u. are no better standard than horsepower or tonnage, they will not bring about the desired "honest" ratings, and they will only confuse the public more.

Those who placed themselves squarely behind any step toward uniformity of ratings believe that such a move would eliminate the current confusion.

The question is made pertinent by a recent proposal by the National Better Business Bureau and the Air-Conditioning & Refrigeration Institute. Beginning

next year they want all room air conditioners to be advertised with B.t.u. capacity ratings, rather than tonnage or horsepower ratings as is now the case.

George Johnston, Minneapolis appliance dealer, summed up the arguments of proponents of the change in these words: "Any time you get anything that will provide ground rules that everyone will accept, it is good."

Miss Marion Johnson of Graybar Electric Co., Chicago distributor, thought the B.t.u. method of rating would be definitely helpful. "It will give a customer more understanding of what he is getting. He doesn't seem to understand horsepower at all now."

John Mulcahy, selling air conditioning for a Chicago dealer, agreed. "It will get rid of the confusion," he said. "We'd have something concrete to base our story on. Now, when a customer looks over a manufacturer's specifications sheet, he is only (Concluded on Page 2, Col. 1)

DETROIT—Summer busted out all over (except in the Pacific Northwest, like our weather forecast indicated) during the Fourth of July weekend, and sales of air conditioning equipment were doing likewise.

It seems certain that some manufacturers would "run right out of" 1955 models of room air conditioners, and the skyrocketing temperatures were spurring sales of commercial and residential package units also.

## See Air Conditioner 1955 Sales Climbing Past Early Guesses

DETROIT—1955 sales totals in various categories of air conditioning equipment may set new records in some cases, and in other instances surpass not-too-optimistic predictions made only a month ago.

On the basis of available figures gleaned from a number of sources, including makers of key components, the following would seem to be the situation:

A big sales month in July might push room air conditioner sales at retail past the predicted total for the current "air conditioning year," and probably beyond the last industry year. (Concluded on Page 4, Col. 5)

## Murray Corp. Set To Purchase Easy Washer's Sales Setup

SYRACUSE, N. Y.—The appliance business and goodwill of Easy Washing Machine Corp. here would be sold to Murray Corp. of America, Detroit, under a contract approved last week by Easy's directors.

The contract also provides for Murray to enter into an operating arrangement for making Easy products in the Easy plant. In addition, Murray would purchase the current assets of Easy and hold a three-year option on its fixed washing machine plant assets.

Besides approving this contract, Easy's directors okayed a proposed plan under which (Concluded on Page 41, Col. 3)

Biggest sales activity was in the big cities of the east and midwest—New York City, Philadelphia, Pittsburgh, Detroit, Chicago, and Milwaukee. These were the spots in which sales were off badly in 1954. Less sensational spurts were being recorded in the Kansas-Nebraska-Iowa-Missouri areas, and in the southwest and southeast, but business has been steadier in those spots up to now.

"Our factory is clean out of some models, and it may be out of room air conditioners entirely well before the end of the month," said a representative of one of the very top manufacturers of air conditioning equipment.

"We're now in the business of transferring stocks between distributors, which is the only way we're going to be able to handle the demand in some of the major markets."

An official of O. A. Sutton Corp., producer of the "Vornado" line of air conditioners and contract manufacturer on a number of other brands, summed up his company's situation as follows:

(1) Sales of room air conditioners by Sutton are 50% ahead of last year; (2) even with a heavy stocking of distributors early in the year, the hot spell has brought additional ordering, with the result that a "completely sold out" situation on 1955 models is likely to develop before the end of the season; (3) it seems probable that some of the other brands which Vornado supplies will also be a sell-out; (4) Sutton hasn't been able to keep up with the demand for its package 2-hp. residential system introduced earlier in the year.

The heat wave has reached back to the Amana factory in (Concluded on Back Page, Col. 1)

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## Ratings for Air Conditioners--

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At the manufacturer level, G. B. Reed of Frigidaire asserted that his company was in favor of the change. "It will be a good thing if everyone uses the same standard," he stated. "If it becomes effective, we will be glad to comply."

Al Rose of Sub-Zero Freezer Co., Inc., a relatively small manufacturer of air conditioners, declared, "We're for the B.t.u. rating 100%. We think it will be a grand thing if everyone rated their units by B.t.u. We take our rating right off the Tecumseh compressor we use in our units."

But we know others claim a higher rating from the same compressor."

A spokesman for Dearborn Stove Co. thought rating by B.t.u. would be "definitely help-

ful." He pointed out that people are used to buying heaters by B.t.u. output and have some familiarity with it.

### 'B. T. U. Only One Phase Of Rating a Unit'

For the opposition, Alan Chadrow of O. A. Sutton Corp. probably put it most clearly when he said, "As a means of getting a standard, the B.t.u. rating will be O. K. if all makes are judged by the same standard. But B.t.u. is only one phase of rating a unit. There is also humidity control and circulation to consider. They are important and they are not included in a B.t.u. rating."

"In Chicago, for instance, humidity is more important than temperature in air conditioning. By the B.t.u. measurement, the customer will get no idea of

what the unit will do for her. For a balanced rating there should be standards for the other factors, too."

While considering a change to B.t.u. rating "well and good," John McDaniel, vice president of Hotpoint Co., declared, "It seems to me that the air conditioning business could well go into the values and features, etc., rather than airing B.t.u. content."

### 'Will Not Be an Entirely Fair Rating'

A Kelvinator representative commented, "A B.t.u. rating will help weed out the jokers, but it is not an entirely fair rating. A manufacturer could increase his coil temperature to get a high B.t.u. rating. But at the same time he would be cutting down on his latent cooling capacity. That doesn't make it a more desirable air conditioner, as the public may be led to believe by the B.t.u. rating. Latent cooling

is important, too, to good air conditioning."

"There ought to be some percentage basis arranged that would require, say, 30% latent cooling."

Edward Lyon, manager of air conditioning sales for Amana Refrigeration, Inc., declared, "We will probably go along with advertising B.t.u., but nothing has been decided yet."

### 'Who Is Going To Police Ratings?'

"Our big question," he continued, "is who is going to police these ratings? There can be just as much exaggeration in B.t.u. as in anything else. The company with the lowest ratings, naturally, is not going to advertise B.t.u."

"Besides, B.t.u. are only one yardstick. There are many other factors to air conditioning that B.t.u. don't cover. We find that more and more people are be-

coming interested in dehumidification as well as cooling. We think this is a good thing and shows that the public is getting better educated on air conditioning."

Typical of distributor comment was a statement made by L. B. Mangione of Electric Supply Co. here. Said he: "The public doesn't know what we are talking about when we talk B.t.u., horsepower, or tonnage. Size of room is easier for them to understand. But there must be a better way of doing it."

### 'Public Thinks of B. T. U. For Heating Only'

Arnold Greenberg of the Sampson Co. thought B.t.u. ratings would not be good to use in consumer advertising because "those familiar with B.t.u. think of them in terms of heating and to apply it to cooling will only confuse the hell out of them."

Many dealers interviewed felt that it will not make any difference what standard of measurement is used because the public won't understand it anyway. As Ted Nemes of Heating & Cooling Products said, "The only advantage will be that everyone will be talking about the same thing."

### 'Retailers Will Still Sell by Ton Rating'

Chicago Dealer E. M. Brady believes that people understand horsepower and tonnage better than B.t.u. "It's our business to handle the correct sizing," he said, adding, "Selling still requires a little surveying on the part of the dealer."

Dealer Walter McCarty asserted: "The manufacturers may come out with B.t.u. ratings, but the retail salesmen will still sell by the ton. But it would be helpful to have published B.t.u. ratings."

Lee Kulp of Empire Cooler Sales thought the B.t.u. rating will not be any good unless the public is educated as to what it means. "I don't think you can put it over," he noted. "The public will call you up now and tell you what they want. They are too well acquainted with horsepower."

### 'Integrity, Honesty' Is All That's Needed

Mort Farr, chairman of the board of the National Appliance & Radio-TV Dealers Association, asserted, "I don't think the change will make any difference. All we need is to get a little integrity and honesty in our selling. There will always be somebody who will find a way to get around the standard."

"If the manufacturers would lead the way by publishing honest ratings in their advertising it would help. We have clear, specific Nema ratings for refrigerators, but the ads still talk of everything from shelf area to gross cubic feet."

Ken Stucky, Fort Wayne, Ind. dealer, declared, "I don't think B.t.u. will mean anything. There is a lot more to air conditioning than cooling. B.t.u. don't measure all the factors. I have an air conditioner in my office. We haven't had much hot weather to need it for cooling. But I can keep my window closed all the time and the office is clean now. It never used to be."

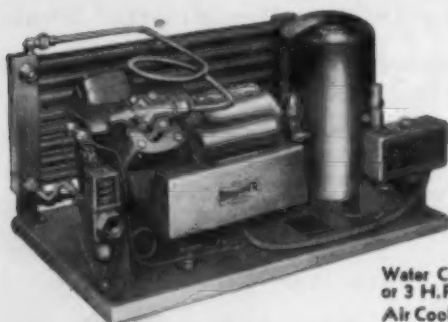


An apple bouncing off Isaac Newton's head started wheels turning in his inquisitive mind. He asked himself why the apple had to fall downward instead of traveling in some other direction. This simple incident touched off a chain reaction resulting in a scientific axiom known as Newton's Law of Gravity.

Inquisitive minds, plus a lot of "apples" in our research barrel, are the order of the day at Brunner. Our engineers never cease probing and searching for ways to improve Brunner products.

The fruit of our research is passed along to Brunner customers in terms of new and finer products, more dependable performance... and more profits for you.

The Brunner Co., Dept. A-715, Gainesville, Ga.  
Brunner Manufacturing Co., Utica, N. Y.  
In Canada: Brunner Corp. (Canada) Ltd., Toronto, Ont.



Water Cooled Brunner-Metic in 1/2, 1/4, 1, 1 1/2, 2 or 3 H.P. ... with cleanable condenser.  
Air Cooled models also available in sizes up to 3 H.P.

### BRUNNER-METIC

#### SEMI-HERMETIC REFRIGERATION CONDENSING UNITS

Compact... completely adaptable... lightweight... quiet... designed for easy field servicing. Offered in a full range of sizes, air or water cooled, for commercial and low temperature applications.

There's a Brunner-Metic for the dozens of refrigeration applications where dependability, economy, capacity and on-the-job serviceability are absolutely essential.

See your Brunner Representative for complete information, or write to us.

**BRUNNER**  
SINCE 1906

#### BRUNNER EXTRAS

Compressor Experience  
Product Research  
Design Engineering  
Wide Product Range  
Proven Quality  
Complete Dependability  
Easy Servicing  
Warranted Performance  
Nearby Distributor Service  
Profit Opportunity  
Advertising Support  
Sales Promotion Help



# AT LAST! what the industry has been waiting for!

## ALCO'S NEW

### Venturi-Flo distributor . . .



The new ALCO venturi distributor assures equal refrigerant distribution to all passes of a multi-circuit evaporator with a low-pressure drop.

#### works in any position

vertical, upside-down or horizontal.

#### wide application range

from 25% of capacity to 150% of rated capacity . . . with only a small pressure drop at maximum conditions.

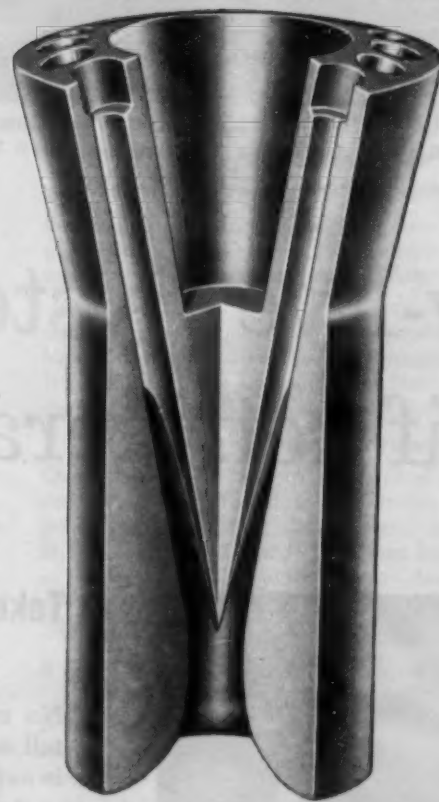
#### low-pressure drop

allows closer and more economical thermo-valve sizing.

#### one-piece construction

no nozzles for capacity regulation . . . nothing to take apart,  
nothing to come apart.

engineered—for service for life



Designers and Manufacturers  
of Thermostatic Expansion  
Valves; Evaporator Pressure  
Regulators; Solenoid Valves;  
Float Valves; Float Switches.

write for section 188-55

## ALCO VALVE CO.

853 KINGSLAND AVE. • ST. LOUIS 5, MO.

6512



What's in a name?

**QUALITY**

...if the Name is

**READING**  
**COPPER TUBING**FOR REFRIGERATION  
& AIR CONDITIONING  
EQUIPMENT**READING TUBE CORPORATION**EMPIRE STATE BUILDING NEW YORK 1, N. Y.  
WORKS: READING, PA.**Laurel Products--**

(Concluded from Page 1, Col. 3)

use in their products, and the units manufactured here will have worldwide distribution," Tittle stated.

He mentioned specifically that the company would specialize in systems and related items for sale to manufacturers of furnaces who wish to include air conditioning with their present models and refrigeration units for vending machines.

"Fabricating machinery for the new plant will be delivered within 30 days," he continued.

"The company will occupy a building at the Laurel airport, which is being remodeled and enlarged to house equipment, the engineering staff, sales office, and general office."

Burnice Denham, president of the local Chamber of Commerce, pointed out that the new plant is the third refrigeration estab-

lishment to locate in Laurel within three years time.

The Norris Co., manufacturer of refrigerated milk dispensers, located here in 1952. Earlier this year, Erickson Industries, manufacturer of walk-in coolers, located here in a building at the airport.

**Copeland Vacation--**

(Concluded from Page 1, Col. 2)

increasing industry demands, we are asking our employees to make every possible effort to help the company meet the urgent needs of our customers.

"Those employees eligible for paid vacations will receive vacation pay July 29. They will be paid regular working wages while working through vacation weeks."

In a letter sent out to each employee, Gleason indicated that current schedules call for uninterrupted production through August, 1956.

**'55 Sales--**

(Concluded from Page 1, Col. 4)

The "air conditioning year," which manufacturers prefer to use for sales comparisons, runs from September to September. For the 12 months' period ending Aug. 31, 1954, it was estimated that manufacturers produced 1,625,000 units.

There has been considerable argument over how many of these were sold at retail, but the most generally agreed upon figure is something slightly over 1,000,000 units, leaving about a 600,000 unit carryover.

Production in the 12 months' period ending Aug. 31, 1955, is now predicted to range between 1,000,000 and 1,100,000 units.

Assuming that practically all of the carryover has been moved at the retail level thus far, retail sales of 60% of the 1955 models produced would put total retail sales this year well above that of the preceding industry year.

Most reports on sales of complete home residential comfort cooling systems indicate that some of the industry's most optimistic predictions on sales totals for the year may well be met.

A recent revision of his estimates on the total sales of such residential systems in 1955, by Carrier Corp.'s President Cloud Wampler, put the figure at a possible 150,000 units, which would be well over twice the number sold in the previous year.

There are some industry observers who feel this is over-optimistic. However, it is worth noting that Tecumseh Products Co. reports that its production this year of 2-hp. and 3-hp. compressors, designed specifically for residential systems, will probably double that recorded for 1954.

One manufacturer of residential air conditioning units, in the field for the first time this year, claims it will produce—and hopes to sell—in 1955, "more than the combined total of units reported by one industry group of manufacturers of such units in 1954."

Sales of package commercial units, which were lagging somewhat in April and May after a good start early in the year, were said to be picking up again in June, and probably are getting some added impetus from the heat wave.

**Vulcan Showing It's  
Liquid Baseboard  
Air Conditioning**

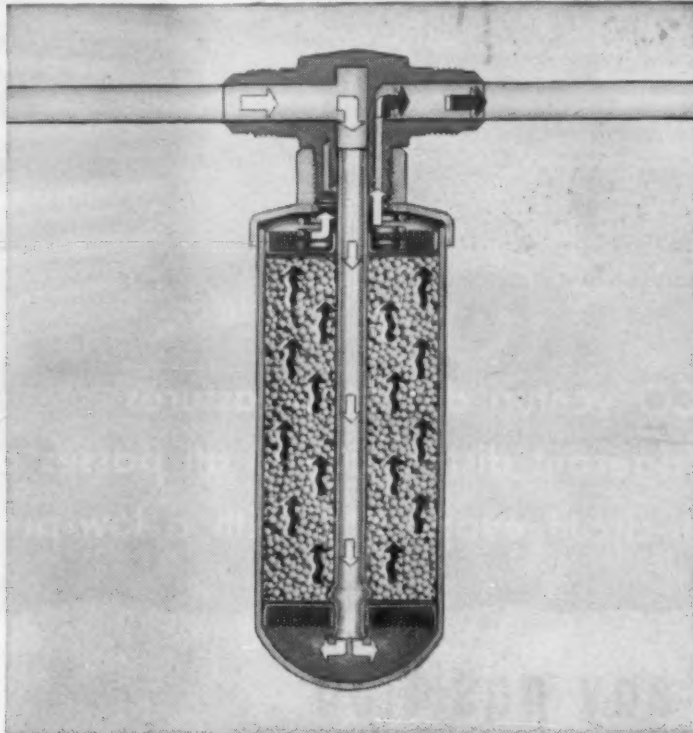
HARTFORD, Conn. — The sales and engineering department of Vulcan Radiator Co. here is conducting a series of coast-to-coast meetings covering Vulcan's new liquid baseboard air conditioning system.

The meetings began in the southern part of the country.

To simplify demonstration, the company built a self-contained working model of a liquid baseboard air conditioning system. This has been shown to architects, engineers, jobbers, and builders in Richmond, Atlanta, Memphis, Birmingham, Jacksonville, and New Orleans, plus a number of eastern cities.



The pink color in the Dry-Eye Connector window changes to blue when T-Flo Cartridge removes excessive moisture.



Note path of refrigerant through uniformly round pellets of Andrite in the T-Flo Dry-Eye Cartridge.

**Dry-Eye System tells at a glance  
if refrigerant is wet or dry**

Once the Ansul Dry-Eye System is installed you can replace the T-Flo Cartridge without breaking the line.

**Takes the guesswork out of refrigerant servicing ...  
controls moisture, removes acid**

No more guessing—now you can tell scientifically if the refrigerant is wet or dry. If the Dry-Eye Connector window shows blue, the equipment is in a safe operating condition. If the window shows pink, excessive moisture is present. To remove the moisture, simply change the T-Flo Dry-Eye Cartridge. That's all there is to it.

Andrite, the drying agent used in the T-Flo Dry-Eye Cartridge, is superior to all other popular desiccants in the deep drying range. This is the range which determines the quantity of desiccant to be

used. As for acid removal, Andrite will pick up 4.5% of its weight in acid when completely saturated with water. The extraordinary drying capacity of the T-Flo Dry-Eye Cartridge allows you, in many cases, to install smaller driers than the ones you are now using.

Test-try the Ansul Dry-Eye System on one of your "problem" units. See if it doesn't make servicing easier, more profitable. Contact your local Ansul wholesaler for a supply of Dry-Eye Systems. ANSUL CHEMICAL COMPANY, Dept. D-12, Refrigeration Div., Marinette, Wisc.





## Will Cows, Pigs, and Poultry Get Air Conditioned Living Quarters?

MILWAUKEE — Will cow barns, pig shelters, and poultry houses be air conditioned?

There is a possibility they will, according to H. L. Garver, engineer in the Farm Building Section of the U. S. Department of Agriculture, who reviewed current research at the 42nd semiannual meeting of the American Society of Refrigerating Engineers here.

### MUST OFFER POSITIVE ECONOMIC ADVANTAGES

If air conditioning is to come to the farm, however, it must offer positive economic advantages and not have any adverse effect, Garver emphasized.

"Several large climatic chambers have been built for the study of small farm animals, but the number of such chambers suitable for large animals now being used is few, probably because of the high cost of maintaining and operating them," Garver explained.

"There are now a half dozen or more working on cows. These climatic chambers are designed for operation at controlled temperature, moisture, and air movement almost anywhere from near 0° F. to well over 100° F. with relative humidities ranging from less than 50% to around 100%.

"The Psychoenergetic laboratory at the University of Missouri is equipped with about 35 tons of refrigerating machinery. The poultry calorimeters used at Beltsville, Md. [by the U. S. Department of Agriculture] require approximately 5 tons of refrigeration," Garver said.

"Under most conditions farm animals, cows particularly and swine, will produce a large

amount of heat so that the heating requirements, in order to maintain high temperatures, are usually fairly low," he pointed out.

"The purpose of most climatic laboratories for investigating farm animals is to determine the most effective housing conditions for maintaining health and high production as well as to promote growth."

Whether or not temperature has any effect on reproduction of farm animals is also being studied, Garver said.

"It has been learned that under proper environmental conditions, feed consumption for a given rate of production or growth can be kept to a minimum," he added.

## Medical Center Gets Air Conditioning

CORPUS CHRISTI, Texas—Air conditioning is a feature of the new local medical center whose motel-like construction makes it an architectural pioneer in its field.

Embracing 33,457 sq. ft. of floor space, the medical center is actually a colony of 10 separate one-story buildings which are connected by walkways which are covered by wide roof overhangs.

One hundred tons of Servel water-chilling equipment, consisting of four 25-ton steam-operated absorption units, provide air conditioned comfort.

Located across the street from Memorial hospital, the medical center has 46 separate spaces.

## Lynch Bldg. Installs Induction Year-Round Conditioning System

JACKSONVILLE, Fla.—An induction year-round air conditioning system is now being installed in the 16-story Lynch building here as part of a program to modernize the 30-year-old structure, S. A. Lynch, Jr. announced recently.

Lynch, who is president of the S. A. Lynch Corp., the building's owner, said that temperature and humidity will be automatically controlled and the system will provide a 25% fresh outside air change. Zoning will permit heating and cooling simultaneously when required.

A penthouse reinforced with structural steel will house a 360-ton York centrifugal compressor, plus a water economiser and other machinery. The com-

pressor will chill city water for air conditioning.

Some 519 induction units will be used around the perimeter of the building. Internal zones and halls will be heated and cooled by a duct system operating from the central station on the roof.

Tenants in the approximately 100,000 sq. ft. of rentable office space can contract or expand their space as they choose and still be assured of ideal indoor climate, Lynch said.

Hill-York Corp. of Miami is handling the installation. Special design for incorporating the York induction system in the Lynch building was prepared by Charles Smoot of Maurice Connell and Associates of Miami.

### 'House of Glass' To Be Built In St. Louis

ST. LOUIS—A \$1,000,000 air conditioned office building for the Hampton Village district, described by its planners as a "house of glass," will be constructed at Hampton and Sutherland Aves.

Architect Arthur B. Rathert said the building will have three walls of glass for maximum transparency and openness. Even corridor walls will be of glass.

Only the building's west wall will be of an opaque material. Rathert said all floors will be completely air conditioned.

### Seven-o-Five Bldg. To Cool 15 Floors

ST. LOUIS—When modernization is completed sometime this fall, the Seven-o-Five building on Olive St. downtown will provide 15 floors of air conditioned offices for tenants.

The new air conditioning system operates through a dual duct installation. Each room has two outlets and gets a minimum of 8,000 c.f.m. of conditioned air.

First floor lobby is also air conditioned.

**NO WAITING FOR PUMPS AND CONDENSERS...**

*Popular sizes carried in stock!*

SERIES 1531 UNI-BUILT PUMP

SERIES 1522 UNI-BUILT PUMP

MODEL CFG  
SHELL AND COIL CONDENSER

MODEL CRF  
STRAIGHT TUBE CONDENSER

### Specially designed pumps for air conditioning and refrigeration applications

For your convenience, a stock of most commonly used sizes of B & G Series 1522 and 1531 Pumps is maintained at the factory for immediate shipment.

The leak-proof "Remite" Mechanical Seal alone makes these pumps a *buy*! This new-type Seal is harder than glass—wear-proof, corrosion-resistant. It's self-lubricating and eliminates leakage through the packing gland—assures trouble-free operation.

### Smooth running... quiet!

Oversize bearings hold the shaft in alignment for smooth, quiet performance...balancing of the impeller prevents shaft vibration and seal failure. B & G Series 1522 and 1531 Pumps kept in stock at the factory are bronze-fitted only, but are available as all-iron, all-bronze or stainless steel units.

With all these advantages, prices are competitive.

### B & G Condensers for replacement or original equipment in smaller installations

B & G quality in two moderately priced refrigeration condensers...built in popular sizes and stocked for immediate shipment.

Model CFG is a shell and coil condenser with extended surface for rapid transfer of heat. Correct designing and sturdy construction assure efficient, dependable service. Built to ASME Code requirements and labeled "UM".

Model CRF is an extended surface, straight tube unit with removable head for easy cleaning. It is constructed and stamped in accordance with ASME Unfired Pressure Vessel Code.

Send for complete information on B & G Stock Pumps and Condensers



**BELL & GOSSETT**  
C O M P A N Y

Dept. DY-47, Morton Grove, Illinois

Canadian Licensee: S. A. Armstrong, Ltd., 1400 O'Connor Drive, Toronto, Canada



## Harry Price Tells 'Bull Session'

## Proper Paying, Handling of Salesmen Creates Sales at List Prices

By George M. Hanning

CHICAGO—"Our future as appliance dealers lies in specialty selling, not in 'supermarket' merchandising," Harry Price, Jr., president of the National Appliance and Radio-TV Dealers Association, emphasized at a recent dealer bull session here.

"A housewife can buy a refrigerator anywhere, plug it in, and it will work. But no supermarket can sell freezers, dishwashers, dryers, built-ins, or complete kitchens. That's our destiny."

For that, Price said, the dealer needs specialty salesmen. A sales force is necessary, he declared, to get business when business does not come in to the store, to keep in contact with old customers, and to supply creative selling to expand new and develop low-saturation markets.

## 100 Customers Support One Salesman

He suggested that dealers could determine the number of salesmen they need by applying the formula that 100 customers will support one salesman. They support him not only through their own purchases, he explained, but also through the leads they give him.

While the dealer cannot eliminate casualties from his sales force, he can reduce their rate as much as possible by selecting new men carefully, training them to sell his way, and compensating them properly, the Norfolk, Va. dealer declared.

## 3 Components of Proper Compensation

Proper compensation, Price explained, must contain three ingredients. They are a steady basic compensation (salary), a motivation (commission on sales), and a long term incentive (year-end bonus).

As long as the dealer's compensation plan contains these elements, what specific amounts he pays is not important if they are fair and equitable for his locality.

Price said that he pays his men a salary, which eliminates the wife's worries about income and gives the dealer a stake in the man's success.

A new man gets \$50 a week for the first two months regardless of his performance. But his third month's salary is based on his sales performance during the second month. From then on, his salary for the month is determined by his previous month's performance.

Sales of \$5,000 per month will earn a man a \$50 a week salary. This moves up to \$60 per week at \$7,000, to \$75 per week at \$9,000, and to \$100 a week at \$12,000.

## Incentives

On top of this, the man gets a 2% commission to provide an incentive to make more sales. A 1% override is also set aside for a year-end bonus.

When hiring new men, Price said, the dealer should have a good place to conduct his interview. Leaning on an appliance

on the sales floor is not such a place.

The dealer should do his interviewing in a clean office and in a relaxed atmosphere. It is important, he said, to make sure the prospective salesman understands just what you are offering him. For this reason, it is best to have your proposition down on paper so that you will not miss any points or confuse the applicant.

## Hiring Is Like Marrying

Price likened the hiring process to a marriage and advised dealers to tell the prospect the bad things about their business as well as the good. He will find out about them anyway, and it will lessen the effect if he hears about them directly from you,

Price argued.

He also advised dealers not to use a "hidden" ad when seeking new men. "If your proposition is good," he said, "you don't have to hide it. If you find yourself using a hidden ad, check up on your proposition and find out what is wrong with it."

Price told the dealers that he believes in "categories" to automatically eliminate those least likely to succeed in his organization. He said he will not take a man under 25 or one who does not have a stable marital status.

The applicant must also have a basic education, an IQ not too high and not too low, be in good health, have a good appearance, be "my kind of people," and give a satisfactory answer to the

question, "Why do you want to work for us?"

He admitted that other dealers have had very successful experiences hiring men who fell outside these categories, but he maintained that they served their purpose for him.

A man who met these qualifications is then screened for ability, intelligence, training, and "drive." He is interviewed by three executives of the firm and must successfully pass their scrutiny before he is hired.

## 90-Day Training

Once hired, Price continued, the dealer must train the man in the way he wants him to sell. In his own firm, Price has set up a 90-day training program.

Then the dealer must evalu-

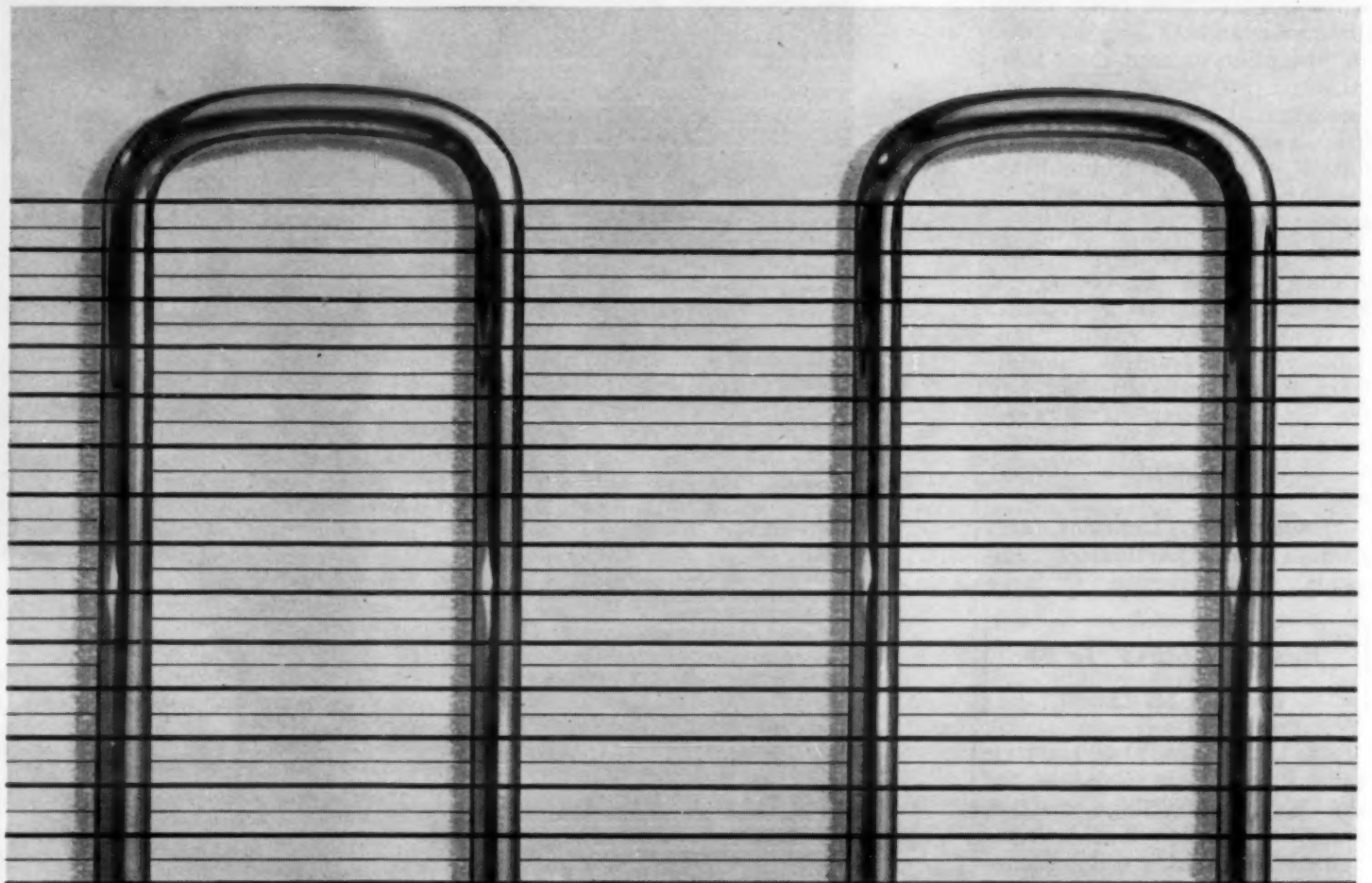
ate his job and tell the man exactly what he is expected to do. This, at Price's, goes right down to providing each man with a daily sheet listing the calls he is expected to make that day and other data concerning his sales objectives and performance.

Finally, the sales manager must keep close tabs on the man to make sure that he performs according to store standards and to help him solve his problems.

"In freezer selling," Price declared, "you can almost chart to the day when the man's enthusiasm is going to die. Then comes your test as a sales manager to find out what has gone wrong and to rekindle his en-

(Concluded on next page)

## Bundy develops square



Another Bundy "first" develops greater efficiency, more secondary surface per coil leg, more cooling area for confined-space applications

## WHY BUNDYWELD IS BETTER TUBING



Bundyweld starts as a single strip of copper-coated steel. Then it's . . .



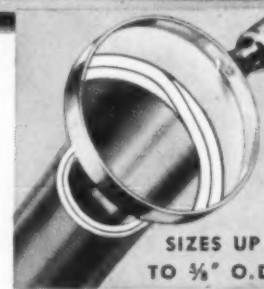
continuously rolled twice around laterally into a tube of uniform thickness, and



passed through a furnace. Copper coating fuses with steel. Result . . .



Bundyweld, double-walled and brazed through 360° of wall contact.



NOTE the exclusive Bundy-developed beveled edges, which afford a smoother joint, absence of bead, and less chance for any leakage.

SIZES UP TO 3/4" O.D.



## Hiring, Paying Salesmen--

(Concluded from preceding page) thusiasm in his work."

Price commented that such a program has paid good dividends for him and kept his sales staff turnover to a minimum.

In reply to a comment from the floor, he explained that the store, and not the salesmen, took the responsibility for trade-ins. A store appraiser judged the value of the trade-in and set the price allowed.

### Fantastic Trade-Ins Not Necessary

Price related that recently he was troubled by competition offering fantastic trade-in allowances. He proposed to his staff a plan whereby salesmen would be permitted to make unreasonable offers without losing their regular commission. The only re-

striction would be that such sales would not give the man credit in current sales contests.

The result, he said, was that at the end of the first week of the experiment, only one such sale had been made. At the end of three weeks, only 16 "kitty" sales, as they were called, were made.

This proved, Price contended, that the men not only did not have to make extravagant trade-in offers, but would not do so even when encouraged.

"Sales will always be made by men who make other people want the products they sell," Price concluded. "The customer in the home is not a price buyer. When he got up that morning he had no idea that he was going to make a purchase that day, but he did. Properly sold, he will pay list price and like it."



PARADE OF THE "FOODARAMA": Citizens of Wayne, Mich., turned out by the thousands recently to watch the annual homecoming parade in which Kelvinator's Foodarama appeared. The Foodarama float, with a lovely model holding a door, was sponsored by Walter L. Gates Furniture, local Kelvinator dealer. A blue ribbon winner at the Atlanta Home Show this year, Kelvinator's upright freezer and refrigerator combination has been featured in expositions, store windows, parades, home and builders' shows across the country.

## Midwest Mfg. Starts Warehouse Expansion

GALESBURG, Ill.—Construction has been started here on a new 45,000-sq. ft. addition to the main warehouse of Midwest Mfg. Corp., appliance manufacturing subsidiary of Admiral Corp.

The plant produces electric ranges, home freezers, and refrigerators, and will begin production this fall of room air conditioners.

According to L. H. Moos, vice president and general manager of Midwest Mfg., the new construction will bring the total warehouse space to over 135,000 sq. ft.

A feature of the new addition will be its provision for stacking refrigerators five high by means of an overhead crane.

## Norge Refrigerator Sales to Dealers Up For First Six Months

CHICAGO—Refrigerator sales to Norge dealers for the six months ending June 30 will double those for all of 1954, reports R. C. Connell, vice president of sales of Norge Div. of the Borg-Warner Corp.

"For the first five months distributors registered increases ranging up to 284% above 1954," he said.

"Widespread consumer interest in a two-door refrigerator introduced last January was a strong factor in the gain," Connell added.

## Victor Kniss Heads Times Appliance Co.

NEW YORK CITY—Victor D. Kniss, an official of Westinghouse Electric Corp., has been appointed to serve also as president of Times Appliance Co., Inc., it was announced recently.

Times Appliance became a wholly-owned subsidiary of Westinghouse last February. It has been wholesale distributor for Westinghouse consumer products in the New York metropolitan area since 1920.

Also announced was the appointment of C. J. Ward as vice president and general manager of Times Appliance.

Kniss succeeds E. B. Ingraham and Ward succeeds A. F. Callahan.

## Brian E. Brennan Joins Servel, Inc.

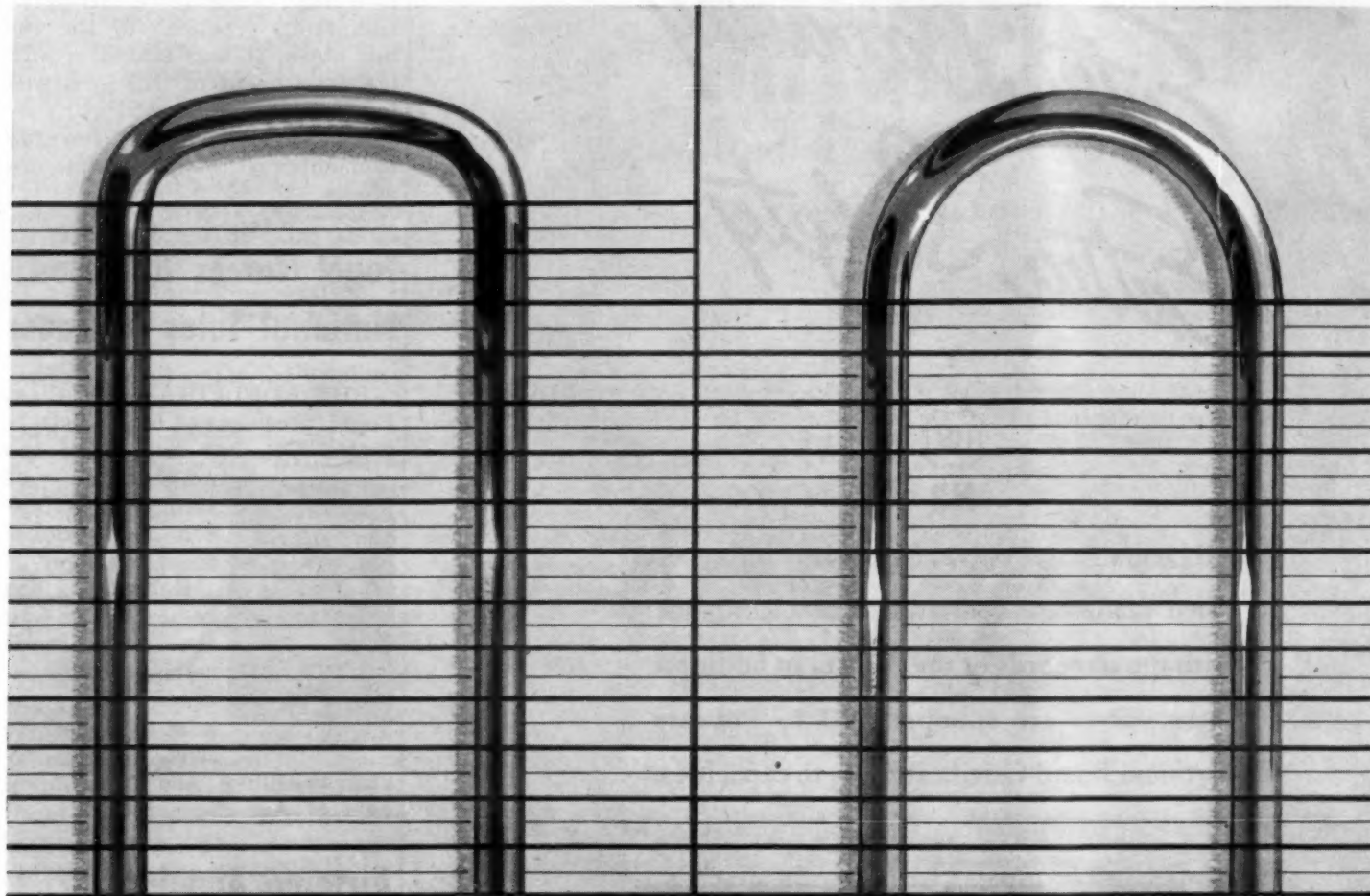
EVANSVILLE, Ind.—Brian E. Brennan has joined Servel, Inc. as manager of manufacturing in the company's home appliance division.

Brennan's appointment was announced by John H. Wall, vice president and general manager of the home appliance division.

In his new position, Brennan will direct appliance production, manufacturing engineering, and production and material control, reporting directly to Wall.

Immediately prior to his present assignment, Brennan was with the Coolerator Co.

# end condenser coils!



New Bundy introduces another "first" to the refrigeration industry—square end condenser coils! This new design gives you more secondary surface per leg length of the coil, providing for more cooling surface.

You get more efficiency from the same size condenser with the Bundy square end coil. Approximately 6 more wires can be attached across each coil leg, making it possible to get greater cooling efficiency in a smaller condenser.

Finding new ways to save our customers time and money is a full-time job with us. And our success depends upon new designs—expert designs carefully developed and perfected by topnotch Bundy engineers, working with dependable Bundyweld Tubing.

Remember that Bundyweld is leakproof by test,

thinner-walled yet stronger, has high thermal conductivity, and takes easily to standard protective coatings.

Get the advantages of dealing with the leader in tubing manufacture. Compare our plus-services of unexcelled fabrication facilities, expert engineering help, custom packaging of orders, and prompt, on-schedule delivery.

Check into our new square end coils for your own refrigeration designs. And for expert assistance on your tubing problems: call, write, or wire us for prompt information.

BUNDY TUBING COMPANY  
DETROIT 14, MICHIGAN

# BUNDYWELD TUBING®

DOUBLE-WALLED FROM A SINGLE STRIP

Bundy Tubing Distributors and Representatives: Cambridge 42, Mass.: Austin-Hastings Co., Inc., 226 Binney St. • Chattanooga 2, Tenn.: Peirson-Deakins Co., 823-824 Chattanooga Bank Bldg. • Chicago 32, Ill.: Lapham-Hickey Co., 3333 W. 47th Place • Elizabeth, New Jersey: A. B. Murray Co., Inc., Post Office Box 476 • Los Angeles 58, Calif.: Tubesales, 5400 Alcoa Ave. • Philadelphia 3, Penn.: Rutan & Co., 1717 Sansom St. • San Francisco 10, Calif.: Pacific Metals Co., Ltd., 3100 19th St. • Seattle 4, Wash.: Eagle Metals Co., 4755 First Ave., South • Toronto 5, Ontario, Canada: Alloy Metal Sales, Ltd., 181 Fleet St., E. • Bundyweld nickel and Monel tubing are sold by distributors of nickel and nickel alloys in principal cities.



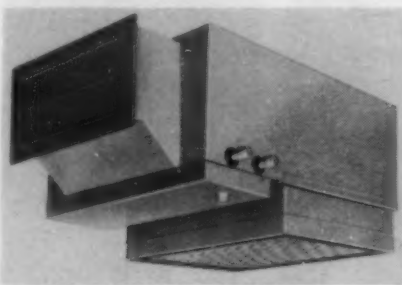
## Recold Air Conditioner Offers 'Inexpensive Comfort Control'

LOS ANGELES—An air conditioner with a plug-in motor and fan assembly has been announced by Refrigeration Engineering, Inc. here. Offering "inexpensive comfort control," it features "extreme simplicity and quietness," according to the manufacturer.

Known as the Recold Model RE Air Conditioner, the unit is available in three sizes for direct expansion systems or chilled and hot water systems.

The model is described as ideal for multiple installation in motels, hotels, residences, and offices. Each unit is individually controlled.

The company said the unit is easy to install in new or existing buildings since it fits into unused area such as space above



RECOLD Model RE air conditioner.

a closet shelf and requires no ducts. The outlet fits between studs. Unit is furnished completely enclosed and includes electrical connection box.

No skill is required to install the plug-in motor and fan assembly, it was pointed out. The installer need only plug the electric cord into the outlet in the housing, slip the unit into



NO SKILL is required to install plug-in motor and fan assembly in new Recold Model RE air conditioner. Simply plug electric cord into outlet in housing, slip unit into place, and fasten with a twist of the finger, says the manufacturer. Servicing is simplified "by the construction which enables anyone to remove or replace the filter in seconds without tools," it is claimed. The filter or the plug-in motor unit in seconds without tools," it is claimed.

place, and fasten "with a twist of the fingers." On new construction, the motor assembly may be installed after the job is completed to avoid theft or damage, the company noted.

## Egg Marketing Group Buys More Refrigeration

COLORADO SPRINGS, Colo. —Poultry Producers of Central California, a prominent egg marketing organization, has purchased a large quantity of additional mechanical refrigerating units for its farm pickup and interbranch trucks, The Refrigeration Research Foundation here noted in a recent information bulletin.

The marketing organization pointed out in a newsletter that it "has a long history of earnest effort and achievement in the development of egg-cooling facilities."

Historical developments cited were: First, evaporative cooling of some plants and boxes. Later, mechanical air conditioning of egg-candling and holding rooms. Still later, mechanical refrigeration for rooms and receiving stations and for trucks.

The goal, to be obtained before long, is complete refrigeration from producer to the retail store, it was stated. "Only the attainment of this goal will insure maximum quality to customers and maximum rewards to members," the association declared.

## Fogel Names Robinson National Sales Manager

PHILADELPHIA — William Fogel, president of Fogel Refrigerator Co., has announced the appointment of Henry S. Robinson as national sales manager.

Robinson has been active in the commercial refrigeration industry for the past 27 years. He was formerly vice president and sales manager of Ace Cabinet Corp.

## Airtemp Appoints Southern Distributor

CINCINNATI — Appointment of The Mutual Mfg. & Supply Co. here as Chrysler Airtemp wholesale distributor for southern Ohio, northern Kentucky, and southeastern Indiana has been announced jointly by officials of the two firms.

Distributing operations will cover Airtemp's full line of commercial air conditioning, residential air conditioning, and heating equipment.

The Cincinnati firm has for many years been one of the largest wholesale plumbing and industrial supply houses in the midwest. The company's five major sales divisions handle plumbing, heating, industrial, metal, and refrigeration supplies. A new Airtemp air conditioning division is now being formed.

Mutual Mfg. & Supply was founded in 1922 by E. W. Bettinger, still active president of the company.

# HENRY ASME relief valves

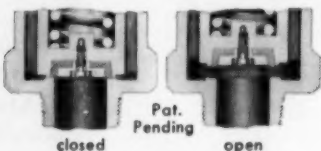
*for Extra Capacity  
Extra Safety*



Type 523 Straight-Through Relief Valves

FOR FREON  
AND SIMILAR  
REFRIGERANTS

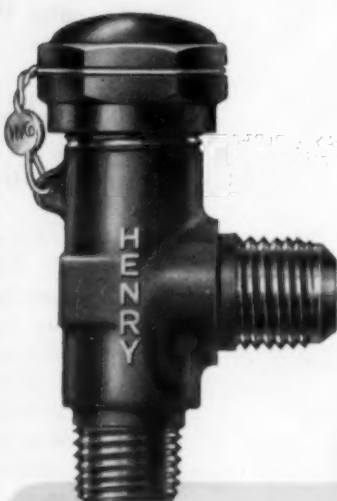
This relief valve has the Henry "Controlled Cushion" cup seat disc construction which prevents deformation of sealing ring and assures consistent operation. This design provides positive relief at predetermined set pressures. Brass construction. Sizes (inlet x outlet) 1/2" M.P.T. x 3/8" Flare; 1/2" F.P.T. x 1/2" F.P.T.; 3/4" F.P.T. x 3/4" F.P.T.; and 1" F.P.T. x 1" F.P.T.



"Controlled cushion" cup seat disc construction

Type 52 Angle Relief Valve

This forged brass valve is available in sizes (inlet x outlet) 1/2" M.P.T. x 3/8" Flare and 3/4" O.D.S. x 3/4" O.D.S.



ASME



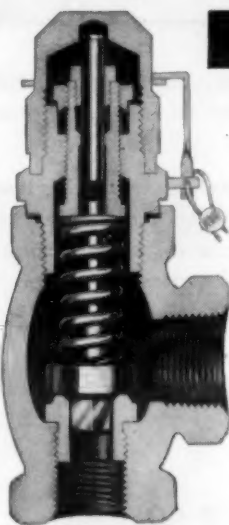
NB National Board Certified

All Henry Relief Valves in the sizes and types listed below are constructed in accordance with the standards of the ASME. In addition these valves are stamped NB to indicate National Board Certification as to capacities.

FOR AMMONIA

Angle Relief Valve

Has soft metal alloy seat and push rod for emergency reseating. Stainless steel trim. Sizes (inlet x outlet) 1/2" F.P.T. x 3/4" F.P.T.; 3/4" F.P.T. x 1" F.P.T.; and 1" F.P.T. x 1 1/4" F.P.T.



All the above valves can be furnished at any desired pressure setting in the range of 50-350 P.S.I.

Write us for data sheet #AE-1303 showing new increased capacity ratings of these Henry relief valves.

See your Henry wholesaler for these certified relief valves.

**HENRY VALVE CO.**

Melrose Park, Ill. (Chicago Suburb)  
Cable: HEVALCO, MELROSE PARK, ILLINOIS

Specialized Manufacturers of the Complete Line of Relief Valves  
for Refrigeration and Air Conditioning





## High Velocity Systems

Results from G.M. Technical Center Installation Indicate  
Small Ducts Save Space But Are Less Economical To Operate

DETROIT—Advantages—and disadvantages—of high velocity, small duct air conditioning systems are illustrated in the experience of General Motors Corp. with its famed Technical Center buildings.

Ducts for a high velocity system are so much smaller than those for a low velocity system that buildings can be designed with lower ceilings and a gain of considerably greater floor area, points out an analysis in *Architectural Forum*.

But with the space saving comes higher installation and operating costs, special pressure control, acoustical treatment, and "particularly fine engineering, both on the drawing board and in the field," it is indicated.

### More Precision Needed

"Slight obstructions or leaks in ductwork that might escape notice in a low velocity system become noisy and play havoc with controls having higher duct velocities."

The magazine's engineering report says:

"Five years ago, almost all air conditioning was done in either of two ways: (1) air was distributed from a centrally located refrigeration plant at low speeds (2,000 f.p.m.) through big ducts to ceiling outlets, or (2) air was conditioned in the rooms by small local cooling units located under the windows. Both systems were (and still are) highly efficient.

"But G.M., about to build 17 office and laboratory buildings at its Detroit Technical Center, was interested in saving every possible cubic foot. Central high velocity ducts concentrated in the spine of the building promised big space savings, because they are shorter and smaller and permit reduced floor-to-ceiling heights. (If duct velocity is increased four times, duct size can be decreased 75%.) And, of course, the smaller vertical ducts also save considerable floor space. Other advantages:

"Smaller ducts are easier and cheaper to install and insulate.

### Double-Duct System Flexible

"A double-duct supply system, with hot and cold ducts operating at 5,000 f.p.m., is highly responsive and flexible, facilitating in-between cooling of a sunlit south side of a building when a north side away from the sun requires heating.

"High outlet velocities (2,000 f.p.m. coming out of the diffuser) produce good movement of room air without causing drafts, thus permit greater temperature differentials between supply and room air and reduce the amount of chilled air needed to cool a given space. High outlet velocities also facilitate perimeter zone control without the use of space-consuming window units and perimeter ducts.

"High velocity systems using air alone eliminate the cost of utility services required for under-window units; no chilled or condenser water piping, in-

sulation, or drainage is required."

In 1949, G.M.'s consulting engineers, Smith, Hinchman & Grylls, called in W. J. Caldwell to help devise a 6,000-f.p.m. high velocity system for the center's Engineering Building, says the report. The mechanical contracts for this ran 80% higher than a standard 2,000-f.p.m. low velocity system and 20% higher than a 3,000-f.p.m. under-window perimeter system.

Two years and two more buildings later, the consulting engineers called for additional help from Thermotank, Ltd., a firm of Scottish engineers who had acquired considerable ex-

perience installing high velocity conditioning in British ships.

### Installation Up 10 to 20% Over Low Velocity System

They helped devise a refined high velocity double-duct system, and when bids came in for installing this in the new Research Laboratory (the fourth building in the center) they were only 10 to 20% above low velocity system estimates, and cheaper than perimeter systems.

"When duct layout is considered in the initial design of a building," the magazine adds, "high velocity may prove even cheaper than low velocity.

Against this must be set the increased operating cost of the high vs. low velocity system due to the greater fan horsepower required. However, electricity costs are comparatively minor and the power requirements can be kept down by careful attention to static regain principles in the duct layout."

After a detailed report on the performance requirements and various other aspects of the latest plant and equipment installation in the Research Laboratory Building, the report sums up with the observation that "as with nearly all advances in engineering, the advantages of high velocity air distribution are accompanied by numerous practical problems. Among the chief lessons 'G.M.'s experience highlights," it includes the following:

"Smaller ducts save space— if duct velocity is doubled the size of the duct can be halved

for a given air flow. But greater fan pressures are required to overcome both the increased friction resistance of the smaller ducts and to pump the air around at the higher velocities. Doubling the static pressure nearly triples the fan hp.

"In general, high duct velocities should be used only where necessary to save space, since larger ducts are more economical to operate. Further, for a given duct velocity, friction losses are considerably greater in the smaller diameter ducts, therefore lower velocities should be used in the smaller branch ducts. (These can often be flexible to facilitate relocation of ceiling outlets.)

"Rectangular ducts need less head room and are more readily available than round ducts but they must be braced, must be made of heavier gauge metals, and have slightly greater friction losses than round ducts.

# MITCHELL®

wanted a special color—  
a special size filter

# AMER-glas®

produced it to a "T"



### LET AAF ENGINEERS WORK FOR YOU

For expert help with your filter problems, call on the leader in filters for air conditioning units. Get the benefit of AAF's more than 30 years' experience devoted exclusively to all types of air filters.

### SEND FOR FREE AMER-glas TEST FILTER!

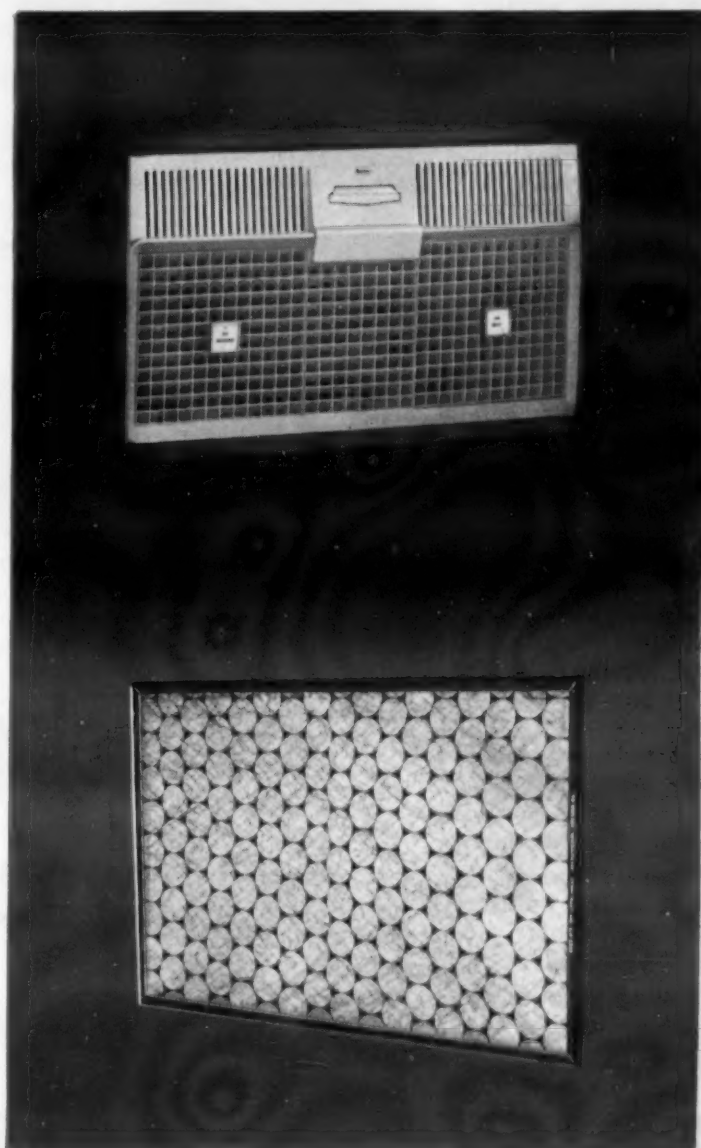
American Air Filter Co., Inc.  
109 Central Ave., Louisville 8, Ky.

Send us FREE test filter and information on AMER-glas filters for air conditioning units.

NAME \_\_\_\_\_  
COMPANY \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
CITY \_\_\_\_\_ ZONE \_\_\_\_\_ STATE \_\_\_\_\_



AMERICAN AIR FILTER CO., INC., Louisville 8, Kentucky  
109 Central Avenue



The makers of Mitchell Room Air Conditioners showed us a special filter model they had designed for use in their new line. "We know, of course, there is no filter anywhere like this," said Mitchell engineers, "but it's the kind we need for our Room Air Conditioners." To produce such a filter meant special jigs—special tooling—as well as dyeing the filtering media the desired color. AAF filter experts collaborated with Mitchell engineers—and soon, filters of exactly that type were being produced by the thousands. In planning your new '56 line, why not get our recommendations on the right filter to use. A discussion with AAF engineers will not obligate you.



## A Dealer Offers His Solution to Room Air Conditioner Sales Problem

New England  
Climate Control Co.  
49 Park St.  
Attleboro, Mass.

Editor:

Several situations have brought me to the point of sending in this letter. Perhaps the numerous ads in Sunday's paper offering window air conditioners at prices way below what we pay for them . . . perhaps, five years of being mixed up in this silly business. . . .

. . . perhaps, sweating out large inventories . . . perhaps, two phone calls from distributors trying to dump units below their cost . . . perhaps R. J. Thompson's article on page 6 of your June 20 issue . . . perhaps, the news item on page 7 of same issue "Vornado Finance Plan Aimed To Put Distributors, Dealers In Competition."

I'm warning you in advance . . . this letter will be a dilly. It is concussion resulting from years of problems.

Mr. R. J. Thompson plans to investigate the room unit business. I don't know where he plans to begin, but I think I can save him a lot of work by telling him just about where he will end up.

### 'People Don't Wait Until They Stink Before Buying a Bathtub'

As of now, people in general don't wait until they stink before buying a bathtub . . . nor until the house freezes before installing a heating system . . . BUT most people wait until it rains before they buy a rain coat . . . wait for bugs to bite them before buying screens . . . wait until it snows until they get a snow shovel . . . and, I regret to state, they wait until the heat makes them miserable before they buy a window air conditioner.

So just what is the industry in general going about this situation?

#1. . . . yelling about how much better their unit is than all other makes.

#2. . . . trying to stuff units down the throats of the unwanted and/or unneeding prospective customer by cutting prices.

#3. . . . producing more and more units to fill more warehouses to tie up more distributors' and dealers' already slim capital.

#4. . . . forcing dealers to sell at a loss and killing the future in general with sloppy installations, mis-calculated installations with little or no service.

RESULT: . . . NONE! . . . ZERO! . . . except. . . .

Confusing the public and killing the necessary price structure required to make a profit when hot weather does come and the customer needs to buy as well as learning to hate the business more and losing money as well.

### Cutting Prices In March

Let's talk about cutting prices. In March we made a window display with a  $\frac{3}{4}$ -hp. unit and a  $\frac{1}{2}$ -hp. unit with list prices at \$349.95 and 189.95, respec-

tively. Incidentally, our location is right in the center of the city and traffic is heavy. We stated at the time on a large card that the price of each unit would drop \$10 a day until sold. The \$349.95 went to \$169.95 and the \$189.95 went to \$99.95 before we pulled the window.

Results . . . NOTHING. YET we sold these same units in June during a warm spell at regular list price.

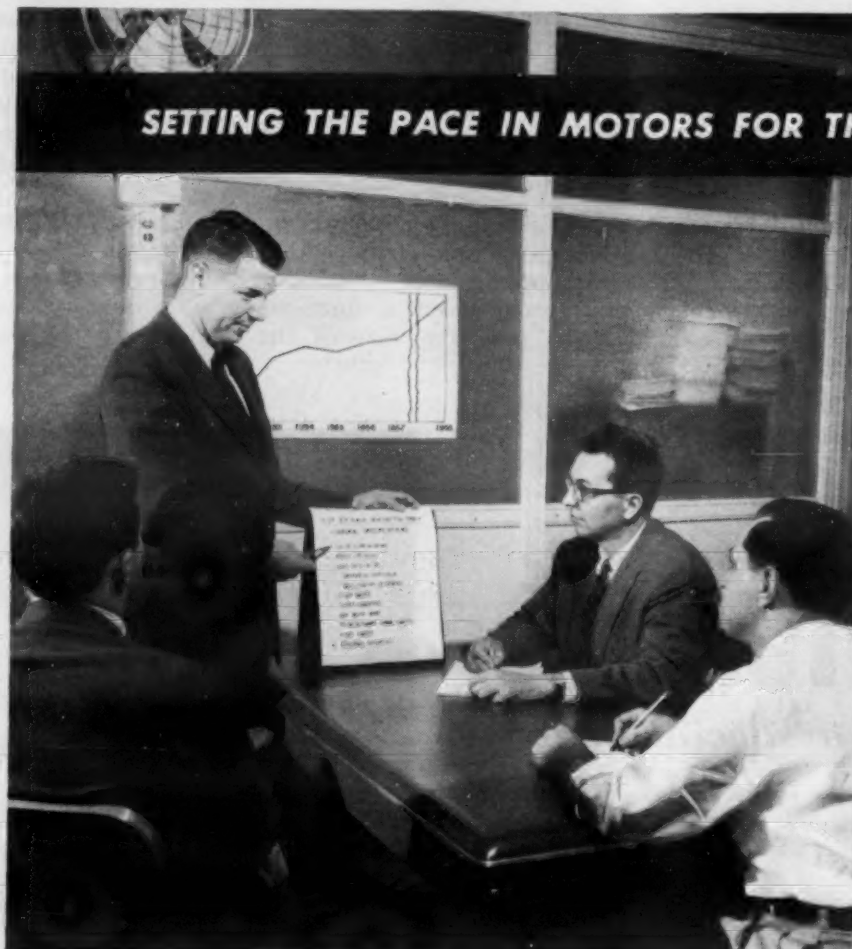
WHY? . . . Read our paragraph No. 4 above.

Last week in Thursday's newspaper we ran an ad on 1955  $\frac{1}{2}$ -hp. at \$149.95 (regular \$189.95). Results . . . NOTHING!

The price might have been getting caught with inventory and tied-up capital. Can anyone make good installations at these prices? NO. Can anyone properly service the units? NO. Can anyone make a profit? NO. THIS IS BUSINESS?

Why is the industry having dizzy spells now? ONE REASON . . . they are SCARED of

WHAT'S THE ANSWER?  
1. Although we know all  
(Concluded on next page)



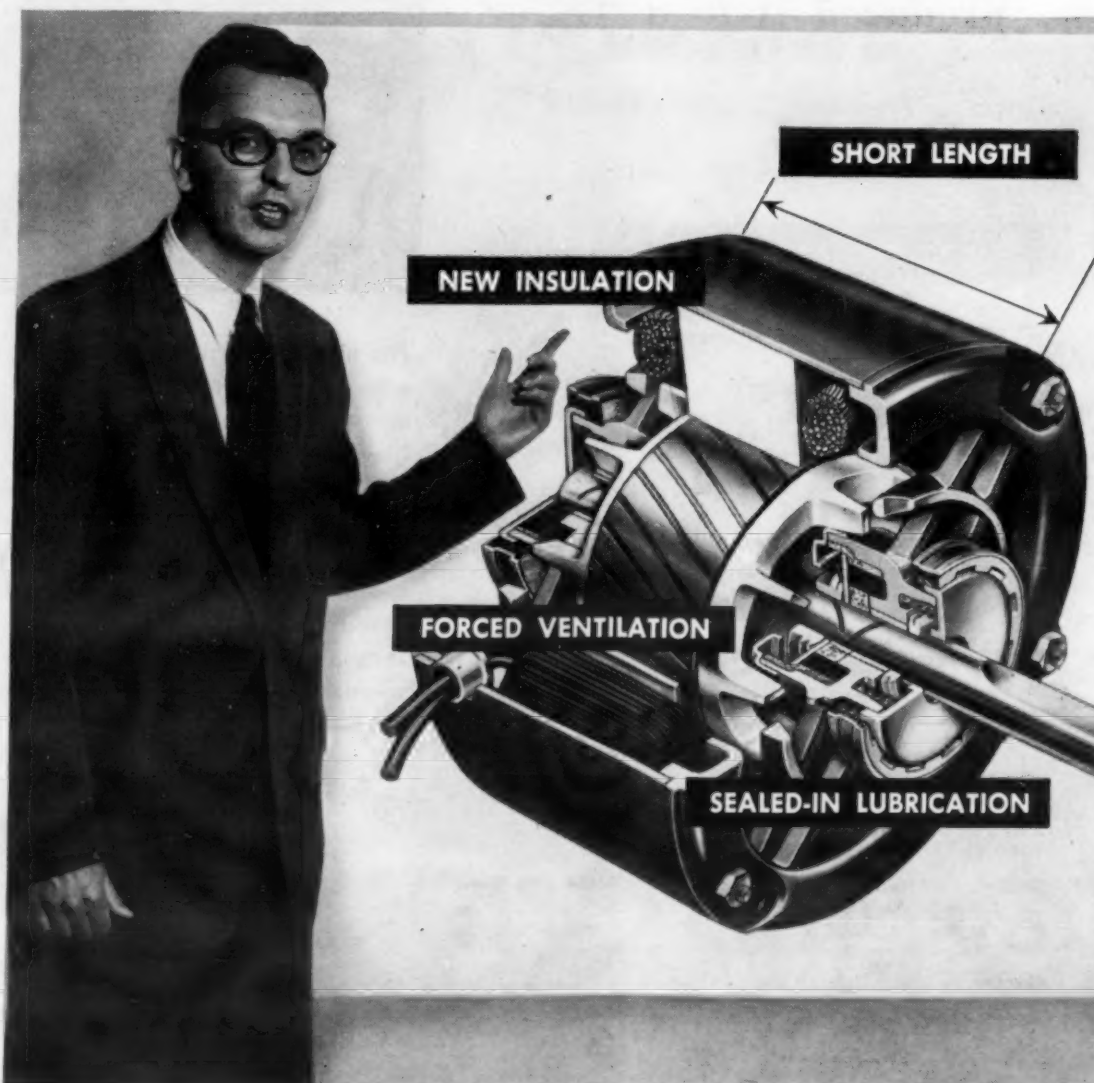
SETTING THE PACE IN MOTORS FOR THE AC&R INDUSTRY

BIRTH OF NEW MOTOR begins with studies by G-E Product Planner (standing) which confirm need to extend economical shaded-pole motor line to larger ratings. Specifications are passed on to G-E Project Engineer.



MANY G-E ENGINEERING SPECIALISTS contribute to new motor, drawing on 19 years of experience in sealed-lubrication design. Here, lubrication expert tests oil pumping action into new bearings as Project Engineer looks on.

## Development of new 1/12 thru 1/4 hp



### Project Engineer points out advanced features of new 1/12 thru 1/4 horsepower G-E shaded-pole motors

Short length of this new motor permits you to design more compact, better-looking products. Saves on your materials, too.

New epoxy resin insulation permeates every crevice and air space in slots and between windings, dries hard and durable.

Forced internal ventilation from aluminum fan blades means cooler operation, longer life.

Sealed-in lubrication protects bearings from foreign material, provides forced oil recirculation. Result: longer motor life, relief from motor maintenance.

GENERAL  ELECTRIC



## Room Unit Sales Problem--

(Concluded from preceding page) about thermal resistance, Btu's and tons, "U" values, factors, etc. we never use this talk around a prospective customer. Why? . . . it confuses the customer.

We talk comfort, increased efficiency, health factors, increased employe production, a good night's sleep, maintaining

good digestive system, reliable equipment, good engineering, neat installations, and service.

2. Invest what we can in good, clear, honest advertising. Keep units displayed. Send out mailers. Service present installations. Study, keep informed, and **WAIT FOR HOT WEATHER.**

3. What about the capital

problem? I think Vornado is on the right track . . . give it to Commercial Credit as that is their business and distributors and dealers have no business being in the banking business.

Instead of trying to see how low, for instance, we can sell a 1/2-hp. unit, establish a set price of say \$299.95 instead of the \$269.95 and take that extra \$30 to pay Commercial Credit. Last year the 1/2-hp. was \$319.95 and they sold then during hot

weather and years before. They will sell just as well at \$299.95 during hot weather as they will at \$269.95.

Take your choice: (1) Sell the 1/2-hp. at \$299.95, make a good profit, let Commercial Credit worry about your capital and inventory . . . or (3) Sell it (or try to sell it) in cool weather at \$269.95 . . . finally try to dump it at \$199.95 . . . lose money . . . inventory worry and tie-up capital.

### Finance Plan Proposed

I don't know what Vornado's plan with Commercial Credit involves but it should work something like this. If the distributor could stock from the manufacturer and the dealer from the distributor and the customer from the dealer on sort of a floor plan so that the distributor would only have to pay say 10% down and the balance to Commercial Credit as units are sold to the dealer this would give the manufacturer his money and the distributor and dealer would not have to pay the 90% until the merchandise is sold.

I know this is standard floor-planning but am just repeating it here for clarity. By this method neither the distributor or dealer would have to tie up capital and this would result:

(1) Both would be willing to stock necessary inventory.

(2) Neither would be rushing to dump inventory at cut prices thereby killing the retail price structure and selling at a loss.

Now how about the borax manufacturers that refuse to go along with Commercial Credit's deal? First . . . all they can gain is to sell the units at retail level slightly less (perhaps \$269.95 against \$299.95 in previous example).

They are going to have a hard time getting distributors and dealers who have already been burned to stock their merchandise and this means that when the demand does start a company tied up with Commercial Credit will have stock available for distributors, dealers, and customers.

The manufacturers must make up their minds to sell through reliable franchised dealers (through the distributor of course). The trouble now is that the distributor is not protected (that is, his capital) and he gets dizzy and sells to every gas station, stationery store, borax department stores, etc.

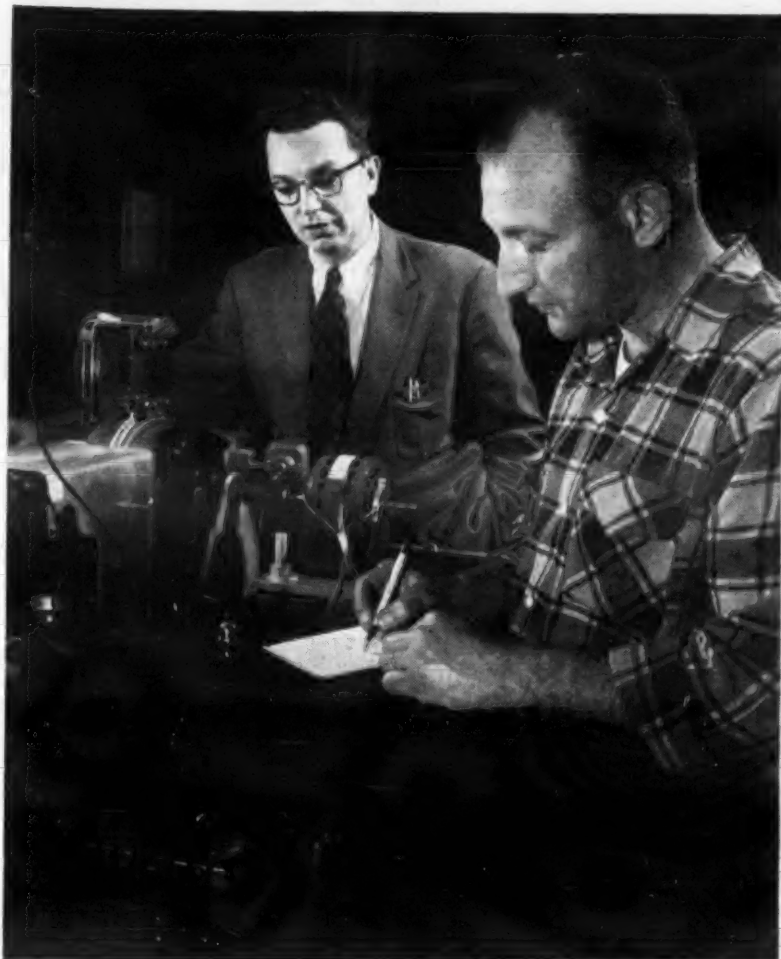
### Auto Industry Went Through Same Problems

The automobile industry went through this growing-pain phase years ago, but I don't recall any \$1,800 cars selling for \$700 . . . they had a plan for merchandising and still have the same plan and I don't note many automobile dealers not making a living.

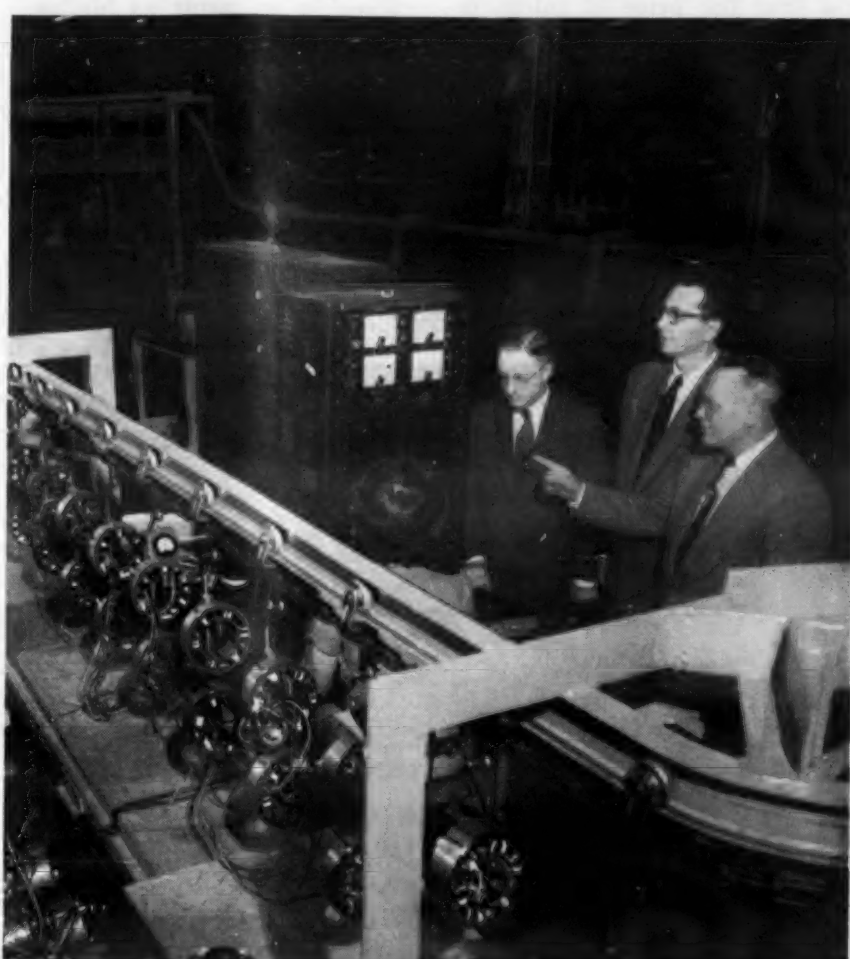
I say let the borax manufacturers stew in their own self-made trouble. Without a plan like I am talking about they can not set up producing reliable distributors or dealers. They cannot have a planned advertising program. They will not have the inventory available when needed . . . they will just be turning out units, fighting to get their money and building nothing but a lousy reputation.

Either I'm too smart or too stupid but all this makes sense to me. When it comes to high finance I'm not too bright but I'll bet that Commercial Credit can figure this all out in much less time than it now takes distributors and dealers to sweat out inventory and working capital problems.

NED PALMER



**EXHAUSTIVE TESTS** prove new motor. When advantages of such features as forced oil recirculation, internal-fan cooling of bearings and windings, and improved insulation are fully demonstrated, motor is released for production.



**NEW PRODUCTION LINE** backs confidence in new motor with substantial investment. Manufacturing Manager, Project Engineer, and Quality-control Manager observe one of 20 quality checks which guard G.E.'s reputation for dependability.

# motors brings G-E shaded-pole economy to your larger fan-drive ratings

## How G-E market research and engineering anticipate and meet your motor needs

Anticipating and meeting motor needs of the fast-moving air-conditioning and refrigeration industry is a real challenge. An example of how General Electric achieves this goal is the development of G.E.'s new 1/12- thru 1/4-hp shaded-pole motor line. These more powerful motors extend to your larger equipment the inherent economy and multiple-speed characteristics of shaded-pole motor construction.

Birth of this new motor line began with determination by G-E market-research men of the general specifications needed to meet motor needs of the AC&R industry. Then G-E advanced-development engineers took over.

Drawing on skills of G-E specialists in every phase of motor design, these engineers created a compact

motor line with the best combination of efficiency, starting and pull-up torque, and speed stability yet achieved in shaded-pole design.

Today, a new G-E production line—an investment made by G.E. especially to meet your needs—is producing these motors in volume.

These new motors are just one example of G-E shaded-pole motor leadership. The G-E combination of experienced product planners, skilled design engineers, and unmatched development facilities is now working to meet your motor needs of tomorrow.

For full information on G-E shaded-pole motors, contact your nearby G-E Apparatus Sales Office today. Or write for Bulletin GEA-6134 to Sect. 704-47, General Electric Co., Schenectady 5, N. Y.

*Progress Is Our Most Important Product*

**GENERAL  ELECTRIC**



# INSIDE DOPE

Learn to live and laugh—  
Thus delay your epitaph

By **GEORGE F. TAUBENECK**

(Concluded from Page 1, Col. 1)  
thought I was the foreman."—  
Cambridge (England) Daily  
News.

"The marvel of history is the patience with which men and women submit to burdens unnecessarily laid upon them by their governments."—SENATOR WILLIAM E. BORAH.

## Expensive Advertising

Television has risen so fast as

an advertising medium that it may be well on its way to pricing itself out of the market. Advertisers are squeezed between rising production costs, higher advertising rates, and the fact that recent figures show that the cost-per-thousand-viewers is on its way down. For many a major sponsor this is a perplexing situation.

What is at the bottom of these skyrocketing costs? Union labor is a big contributing factor, and broadcasters will tell you that the price of talent is way out of proportion to its quality, or to the amount of work done. Added to the production tag is the cost of stage sets—which are just about double a year ago. The more complicated the show, the more expensive the set.

Furthermore, advertising agencies which defy time-dead-

lines run expenses even higher by delaying decisions on scripts until the last minute. Result: a jam-up of rehearsals; and exorbitant and unnecessary overtime for actors, engineers, and everyone else in the picture.

Effect of these high-flying video rates has been evidenced by the paring of shows from an hour to a half hour, splitting time up among several sponsors, or the sad elimination of several good low-budget sponsored shows.

"Even in an outfit as big as ours, television costs distort our entire advertising budget," declares as G-E spokesman. "While television is important, we're not sure how important it actually is."

Despite all of the juggling, TV networks have no sales problem. For every advertiser that cuts back a program there is another

ready to move in and absorb the time. This buyers' market may continue for some time, at least until more stations can be added. And that won't happen overnight.

## Trouble Ahead?

The American Statistical Association has decided to account "fringe benefits" when figuring employees' incomes. Such benefits averaged about 23 cents an hour in 1948 and have increased steadily since then.

Real incomes of workers cannot be measured accurately by published statistics. Furthermore, most figures which purport to assay wages understate rises in workers' incomes in recent years.

"Wage and price relationships," according to Dr. George Cline Smith, "boil down to the single concept of real wages. Yet nothing is being done to develop a means of making current measurements of changes in real wages as such. This is all the more surprising when we realize that wages and prices have been voluminously studied for more than half a century."

"We must either re-define wages in terms of the total return to the employees, or accept the term 'real income' in place of 'real wages.' Whole new fields of non-wage payments need to be explored, and data collected on them regularly."

When early studies of real wages were made, take-home pay and earnings nearly always were identical. Recent rapid increases in non-wage payments or wage supplements has caught wage statisticians flat-footed.

"Enough evidence exists," Smith footnotes, "to indicate that: (1) Wage supplements have reached such a size that any attempt to measure real wages without them is grossly inaccurate; (2) there is an enormous variety of such supplements, some of them very difficult to measure; and (3) the size and variety of wage supplements is increasing rapidly."

Dr. Emerson P. Schmidt, economic research director of the Chamber of Commerce of the United States, declares that marketing executives "may as well order their overalls right now" unless they begin fighting powerful forces aimed at "destroying the free market and a competitive economy."

"If this tendency toward monopoly and the destruction of competition gains the upper hand, the rosy prospect for members of your profession will lose its bloom. . . . Under a planned economy, there is little for a star salesman to do—unless he becomes an expert in propaganda."

Schmidt thinks that the CIO is seeking to reorganize the nation's economic system by "codetermination" (an equal number of labor and stockholder representatives would form policy-making boards of every company).

CIO President Philip Murray has gone all-out for permanent price controls, regimented rates of output, rate and nature curbs on capital investment, and restricted technological changes.

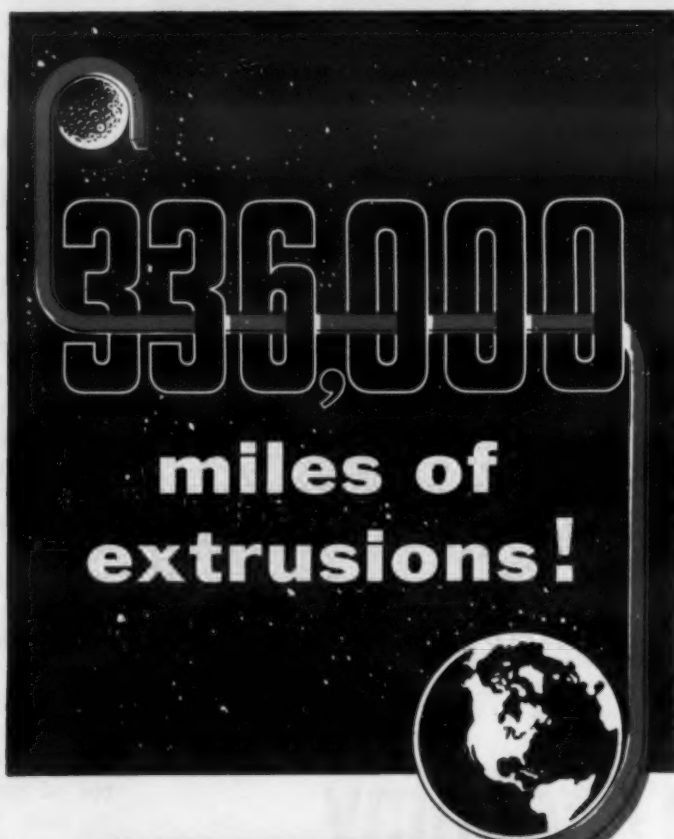
"The CIO Plan is similar to Mussolini's Fascism," Schmidt warns.

## Good News, for a Change!

America stands on the threshold of a great new era in foreign trade, according to J. B. Kubish, export manager of the Bendix Home Appliance Div. of Avco Mfg. Corp.

"There is a growing voice among the underdeveloped nations of the world for self-improvement and advancement. When this desire is considered together with the high costs inherent in 'exporting' and the inevitable long term imbalances and non-convertibility of the world's currencies, local manufacture abroad often becomes the only sensible course to follow. Making local manufacturing

(Concluded on next page)



Our extruders have turned out enough plastic and rubber extrusions to reach to the moon and halfway back. In compiling this vast experience General Tire's Industrial Products Division has supplied thousands of original equipment manufacturers with just about every known type of extrusion. No job is too large, too small or too complicated for our design and production staff. Perhaps you can benefit from the fantastic extrusion mileage we've accumulated down through the years.

For literature or further information write to The General Tire & Rubber Company, Wabash, Indiana, Department B.

"From Plans to Products  
in Plastics and Rubber"



## LARKIN HALF-TURRET HUMI-TEMP

Efficient operation makes a product easier to sell on one hand; builds solid customer satisfaction on the other. Precision engineering, only the best materials, skilled craftsmanship, and over 25 years experience in commercial and industrial refrigeration add up to higher efficiency for every Larkin product. And this means lower operating costs—important to buyer and seller alike.

Manufacturers of the original Cross-Fin Coil  
• Humi-Temp Units • Frost-O-Trol Hot Gas Defroster • Evaporative Condensers • Cooling Towers • Air Conditioning Units and Coils  
• Direct Expansion Water Coolers • Heat Exchangers • Disseminator Pans.

WATCHDOG OF THE NATION'S FOOD SUPPLY

**LARKIN COILS**

519 MEMORIAL DR., S.E. • ATLANTA, GA.



## Inside Dope

(Concluded from preceding page) ing arrangements in those countries where such manufacture provides the most economical source of supply to the market has been a constant objective of Bendix Home Appliances.

Mr. Kubish also points out that sales development abroad should be a matter of intense concern to the management of any company seriously interested in a large volume of foreign business.

"Those manufacturers who are seeking a large volume of business overseas must recognize that the problems of sales development in foreign markets go hand in hand with the problems of production and supply."

Mr. Kubish "does not subscribe to the belief held by some in the international field that American salesmanship and selling methods cannot be adapted and used in other countries.

"We are absolutely convinced that the development of the last three decades will be dwarfed by the levels to which foreign business will be carried during the last half of this century. We see markets that are today largely undeveloped, markets in which social and political and economic changes are rapidly making nations ready for higher living standards. These are the great new markets of tomorrow, and preparations to cover them must be made now."

### Security Without Bankruptcy

The Committee for Economic Development has begun an appraisal of the "complex strategy problem" involved in the threat to our national security, CED Chairman Marion B. Folsom of Rochester, N. Y. reports.

"We believe that this job must not be done entirely by the Government. The public must assess the plans of the officials it has charged with the execution of the defense program," declares Mr. Folsom, who is treasurer of the Eastman Kodak Co.

"The existence of a serious threat to our security is clear," Mr. Folsom continues, "but its nature and magnitude are hazy. Our knowledge of activity behind the Iron Curtain is sketchy at best. In this new kind of war, the aggressors do not show their hand, and the defenders must try to figure out what cards they hold."

The American public must give careful consideration to the following questions through full and free discussion.

1. "What do the Russians hope to accomplish against the free world, and particularly against the United States?" The conclusions drawn from an assessment of Soviet aims and resources must not be one-time conclusions, but must take the form of continuing reappraisal. They must allow for change in plan made by the Russians for the purpose of making our decisions obsolete and unsuitable.

2. "How much defense do we need?" Having made an assessment of Soviet strength and

goals, a comprehensive plan for the defense of our security must be developed. Our immediate goal is to deter the Russians and their satellites from attacking free nations. The total size of our defense effort is only one of many considerations. National security depends not only upon military defense, but also upon a healthy economy, the preservation of individual freedom, the effectiveness with which we employ non-military security measures—diplomatic, psychological, and economic.

3. "How much should our Allies contribute in manpower, weapons, in raw materials, how much military or quasi-military defense can they build without impairing their precarious domestic economies, how much of America's assistance to them should be military and how much economic?" If we devote too large a share of our re-

sources to weapons production our long-run solvency will be harmed.

4. "How much should we be doing to help the underdeveloped countries improve their living conditions and production?" Consideration must be given the question of whether the United States in its "zeal to build up military defenses against communism," is devoting enough thought and effort to developing a "positive and constructive program for lasting peace."

5. "Are military authorities planning their forces and weapons to fit the sort of war we might have to fight?" How much of our military expenditure is being devoted to weapons we might be able to use and produce currently or on short notice and how much to designs for the future?

Is there a coordinated plan

tying together the different sections of the security program—military, economic, and political, national and international? Are military demands attuned to economic possibilities? Are the plans and schedules that have been drawn up being met?"

Obviously, sensible public appraisal of the success of the defense program depends upon a constant flow of information. Without adequate knowledge of the nature of the threat to our security we leave ourselves open to any number of serious mistakes. We may acquire insufficient defenses or the wrong sort of defenses. Or we may overarm and expand such a large part of our resources on military defense that we will weaken our domestic economy, preventing us from helping other free countries from improving their conditions.

The national Security Coun-

cil should be strengthened with the addition of three full-time civilian members without other Governmental responsibilities, one of whom would be responsible for making the flow of information about security matters to the public more effective.

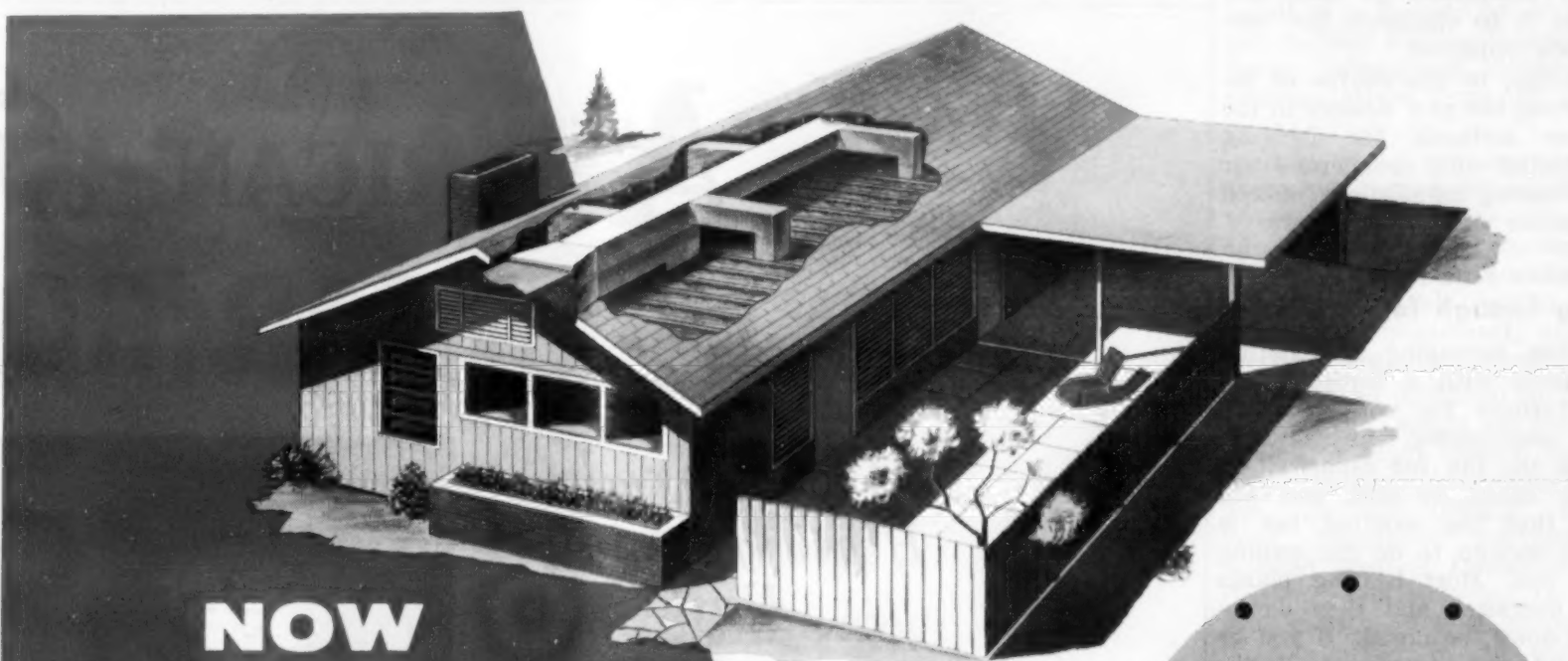
The CED recommends:

1. Strict economy in government expenditure, Federal and local, non-military and military, and the postponement of all deferrable government expenditures.

2. Taxation that will limit the rise in income available for consumers and businesses to spend.

3. Monetary, credit, and debt-management policies to restrict the volume of credit and the money supply.

4. A vigorous national campaign to promote savings of all kinds.



# NOW

## you can AIR CONDITION 5 or 6 room houses in ONE DAY

# Vornado's

## NEW RESIDENTIAL AIR CONDITIONERS



### VORNADO Residential Air Conditioners

represent the most advanced engineering principles in air conditioning. Available in 2 H. P. and 3 1/2 H. P. Powerful, yet compact, lightweight, and economical to operate. Twin system operation for better humidity control. Thermostatic controls available for completely automatic operation. Five-year guarantee on unit.



### VORNADODUCT

Prefabricated, insulated, patented Fiberglas duct work. Drastically reduces installation costs. Outer covering of aluminum foil is a perfect moisture barrier, and 3/4" thick Fiberglas gives maximum insulation. Assembled by merely folding pre-scored sheets together, and taping edge.

Vornado makes it possible for you to install a complete air conditioning system in homes ranging from 1,000 to 1800 square feet in one day. Vornado has completely packaged all necessary components for the job, and makes installation extremely simple.

Duct work problems have been simplified with Vornado's new patented prefabricated Vornadoduct. You can completely air condition 5 and 6 room homes with Vornado for as little as 60¢ a square foot, including cost of unit, duct work, and installation.

The prefabricated Vornadoduct is available for installations requiring separate duct work. Made of 3/4" Fiberglas, Vornadoduct is assembled by merely folding pre-scored sheets together and sealing the edge with tape. Moisture barrier and insulation qualities are extremely high.

Available in both 2-H. P. and 3 1/2-H. P. sizes, Vornado residential air conditions have FHA and VA acceptance. They are completely self contained, air cooled, and need only to be connected to electrical supply to begin functioning.

See your Vornado distributor today. He'll show you all the amazing facts about Vornado's low cost, simplified air conditioning system.

Products of

**THE O. A. SUTTON CORPORATION** Wichita, Kansas

*Specialists in the manufacture of comfort cooling appliances*



# Tips on Installing Residential Systems Given by Robert Macrae

DETROIT—After installing a residential air conditioning system, don't try to balance it out to the gnat's eyebrow, Robert Macrae, Detroit representative for Carrier Corp., told a group of new southeastern Michigan Carrier dealers recently.

"Just open all the dampers, turn on the system, and walk away from it," Macrae advised the group.

"Don't try to adjust each outlet to the calculated c.f.m. with a velometer," he said, "You may have made a mistake in your calculations. Let the system itself compensate for it."

"Run the system wide open for a while. Then, if the customer complains, go back and adjust it to eliminate the customer's objection."

Macrae, in the course of instructing the new dealers in the proper methods for figuring residential and commercial air conditioning installations, offered a number of other pointers.

## Furnace Fan May Be Big Enough for Cooling

When surveying an existing residence with a forced warm air furnace for converting to air conditioning, he advised, check the fan for capacity. In many cases, he said, you will find that the existing fan is large enough to do the cooling job, too. Most heating plants are oversized and then dampened down, he noted. If you go around and open up all the dampers in the system, you may find that you have enough capacity for air conditioning.

The Carrier representative suggested that when mounting an air-cooled condenser outdoors, it be oriented so that it does not blow directly on the house or toward a neighbor's house. These are sources of objectionable noises that can be avoided by moving the air in another direction. Condenser air blowing on shrubbery can kill it, he added.

## Mounting Air-Cooled Condenser In Attic

If an air-cooled condenser is to be mounted in the attic or garage, he declared, do not figure the temperature inside the attic or garage before the installation as the ambient temperature. Rather use the approximate outside ambient. The condenser in operation will draw outside air through the space, effectively lowering the inside temperature, he explained.

For units mounted on a flat roof, he noted, solar heat is a negligible factor because of the large amount of air flow over the condenser and the small area it occupies.

With water-cooled condensers, he recommended that the dealer put as much water as possible through the condenser. If the customer complains about the amount of water used, he added, close the water valve a bit.

"His electric bill will go up," Macrae admitted, "but he only sees it once every month or two, whereas he is conscious of water

flow every time the compressor runs."

He observed that the key to air conditioning with self-contained units is to balance the sensible and latent heat loads. Whatever you take out of the sensible heat capacity of the unit, you automatically put into its latent heat capacity.

## Slow Down the Fan

Therefore, when the application has a heavier latent heat load than normal, slow down the fan so that more refrigerating effect goes into latent heat extraction. With less air movement and cooler air at the outlet, more moisture is absorbed by the air, he said.

Macrae suggested that for ventilation on commercial jobs, the dealer figures 5 c.f.m. of outside air per person at a minimum and 30 c.f.m. for each smoker. For light loads, the dealer can depend on leakage and the opening of doors to handle the exhaust requirements. But on heavier c.f.m. loads, an exhaust vent is necessary.

In restaurant installations, where a kitchen ventilator is used, he recommended that outside air be supplied directly to the kitchen rather than depending on leakage from the dining room. This is necessary to maintain the desired conditions in the dining room, he said.

## Viking Names Main To Head Mfr. Sales

CLEVELAND — Richard F. Gang, general sales manager of Viking Air Conditioning here, announced the appointment of Robert V. Main to the newly-created post of manager of manufacturer sales. Main has been sales manager of Viking's Blower Div. for the past two years, according to the announcement.

As head of manufacturer sales, Main directs the nationwide sales of Viking products to manufacturers of heating and cooling equipment.

Viking Air Conditioning is a manufacturer of furnace and air conditioning blowers, blower wheels, duct blowers, furnace humidifiers, blower packages, and residential window and attic fans.

## Carver Pump Appoints Regional Sales Mgrs.

MUSCATINE, Iowa — Appointment of Warren Ball as west central regional manager and Kenneth Adams, Jr. as regional sales manager in the southwest has been announced by Carver Pump Co., manufacturer of centrifugal pumps.

For the past several years, Ball has managed contractor pump sales as well as export sales out of the home office here. In his new post he will cover Iowa, Missouri, Kansas, Nebraska, Minnesota, and North and South Dakota.

Adams has had many years of experience serving the industrial markets in the southeast. He will work with distributors in Georgia, Florida, Alabama, Tennessee, and North and South Carolina.

# AMERICAN-Standard YEAR 'ROUND AIR

## Gas-Fired Heating-Cooling Unit

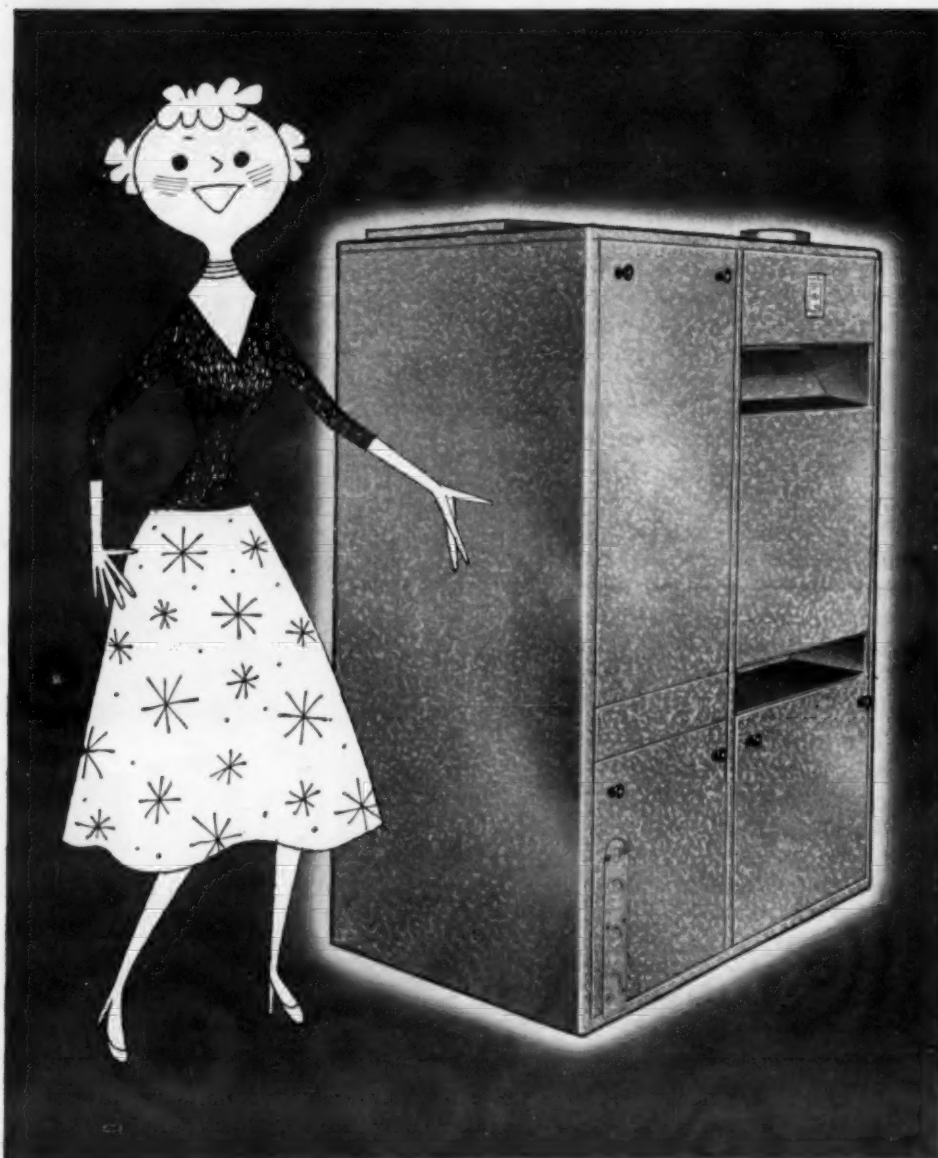
Heating*	Cooling	
75,000 Btu	2 hp	—
100,000 Btu	2 hp	3 hp
125,000 Btu	2 hp	3 hp
150,000 Btu	2 hp	3 hp

\*Btu Input

Here—at competitive price—is a famous-brand, top quality year 'round unit that offers a variety of heating capacities with choice of 2 hp or 3 hp cooling.

Compact in size, ruggedly built, this model performs efficiently in any style of home . . . can be installed in utility room, closet or basement with only a minimum of floor space required. The complete comfort it provides is a strong selling point for the builder, and a strong incentive to present home owners to replace their old furnaces now with year 'round air conditioning.

Available with summer-winter thermostat and manual or automatic summer-winter changeover damper. Unit may be obtained less cooling circuit if desired. The cooling circuit is covered by American-Standard Five Year Protection Plan.



**FACTORY ASSEMBLED—READY FOR INSTALLATION**  
Refrigerant circuit is packed separately for convenient handling.

## DEALERS!

See your American-Standard Distributor.

He's listed in the Yellow Pages of  
Your Classified Telephone Directory  
under "Air Conditioning Equipment" or "Furnaces"



## Regional Mgrs. Named For M-H Home Products

MINNEAPOLIS — Appointment of three new regional managers in Minneapolis-Honeywell Regulator Co.'s Home Products Div. was recently announced by R. H. Jacobs, manager of the division.

They are: Carl von Buelow, in charge of the southwestern and Rocky Mountain region with headquarters in Dallas; Edwin A. Spellerberg, the central and southeastern areas with headquarters in Columbus, Ohio; and David Plesser, in charge of the east and mid-Atlantic coast regions with headquarters in New York City.

The new managers will be responsible for the sale of Honeywell automatic control equipment and systems to the home builder market.

## Metal Curtain Walls To Be Topic of Conference

WASHINGTON, D. C. — Effects of glass to wall area ratios on air conditioning of multi-storied buildings will be touched upon at a two-day conference on metal curtain walls to be held here Sept. 28 and 29 by the Building Research Advisory Board of the National Research Council.

A small working conference on the same topic that had been originally scheduled for June 29 has been canceled.

The September meeting will be held at the National Academy of Sciences here.

## Hewitt In Larger Quarters

WALTERS, Okla. — Hewitt Refrigeration Co. has occupied more spacious quarters at 109 N. Broadway.



THIS AIR CONDITIONED TRAILER is touring the country with Fiberglas products for industrial maintenance in large plants. Here plant maintenance supervisors are shown inspecting such products as Kaylo block and pipe insulations, Fiberglas industrial insulations for both hot and cold applications, roof insulation, Fiberglas-reinforced plastic paneling and pipe filters, electrical insulations, Fiberglas-reinforced papers and tapes, and sound control products including baffles, ceiling tiles, boards.

## Burgess-Manning Co. Plans Research on Radiant Space Heating

CHICAGO — An international research project on radiant space heating is being planned, Dudley W. Day, vice president of the Architectural Products Div., Burgess-Manning Co., announced recently upon return from Europe.

It is expected that the project will be carried out by one of the research groups in the United States. Initially, it is anticipated that the project will extend investigation into the physical phenomenon of radiant space heating, with the psychological, comfort, and other factors being explored at a later date, Day said.

The plans were discussed in detail at a convention of Frenger Radiant Ceiling licensees at Berne, Switzerland, attended by representatives from 13 countries.

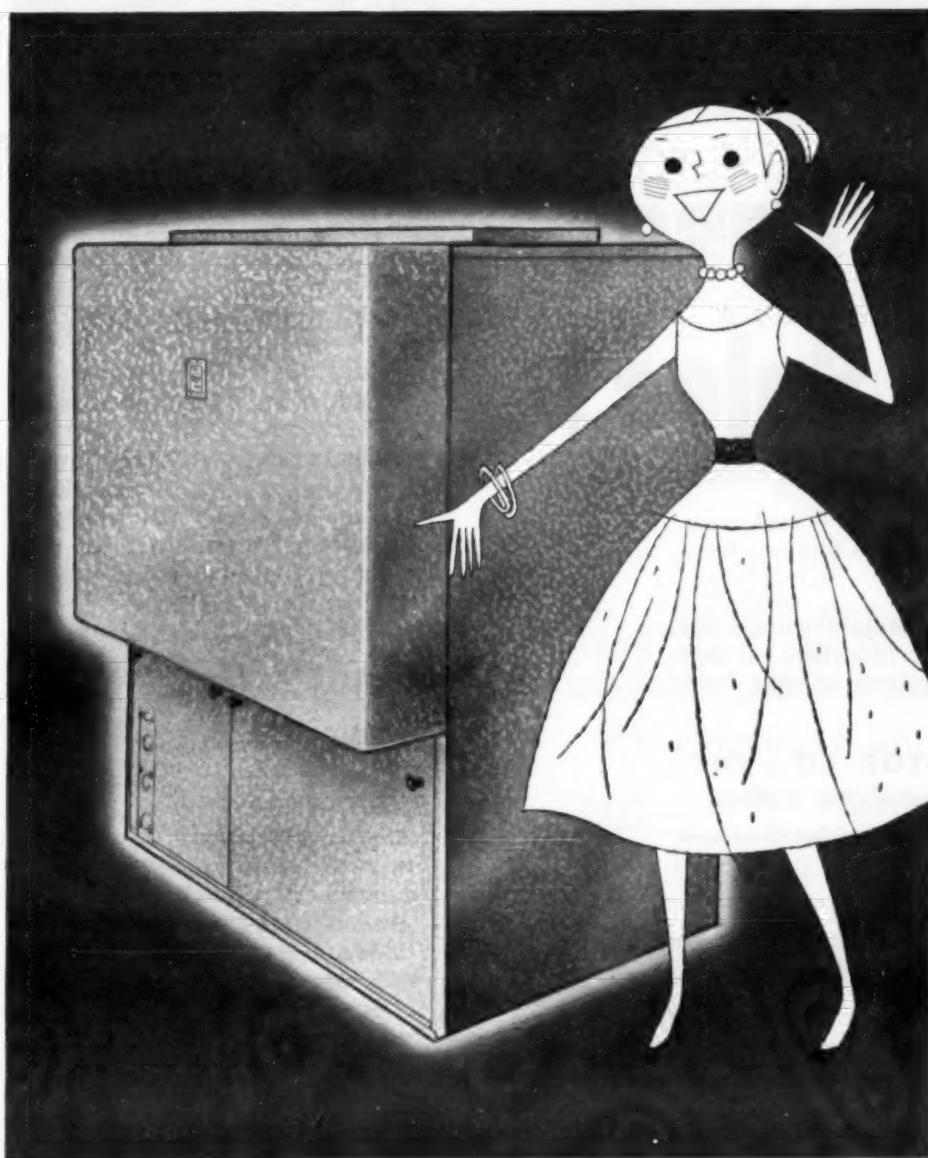
Day, whose company is the exclusive United States licensee, was one of the principal speakers at the convention, which also marked the 10th anniversary of this ceiling that heats or cools radiantly and incorporates sound control.

More than 5,000,000 sq. ft. of the Frenger Ceiling has been installed in the United States, Great Britain, Australia, Sweden, Norway, France, Italy, West Germany, Switzerland, Holland, Austria, Denmark, and Belgium, Day revealed. Of this total more than 1,000,000 sq. ft. have been sold in this country and 1,500,000 sq. ft. in Great Britain.

For the most part Europeans are utilizing only the heating and sound conditioning features of the ceiling, except for Italy where summer cooling is more of a problem, Day pointed out.

The ceiling is the invention of Gunnar Frenger, of Oslo, Norway. Since introducing it in this country Burgess-Manning has made several changes in its mechanical aspects, while retaining the basic features of the perforated aluminum pans covering water coils and backed with an acoustical pad to provide sound control.

# ANNOUNCES 2 NEW CONDITIONING PACKAGES



FACTORY ASSEMBLED—READY FOR INSTALLATION  
Refrigerant circuit is packed separately for ease of handling.

## Oil-Fired Heating-Cooling Unit

Heating*	Cooling	
85,000 Btu	2 hp	3 hp
112,000 Btu	2 hp	3 hp

\*Btu at Bonnet

American-Standard's new oil-fired combination summer and winter air conditioner offers flexibility as to relative heating and cooling capacities. It enables the new home builder or the present home owner to achieve the utmost in year 'round comfort at lowest cost consistent with top-brand quality.

Handsomely styled, compact in design, this unit can be installed in any type of home wherever a few square feet of floor space is available—utility room, closet or basement.

Not only does this model excel in performance—it's competitively priced to sell fast. Features include manual or automatic summer-winter changeover damper, and summer-winter thermostat. The cooling circuit is covered by American-Standard Five Year Protection Plan. Unit is available with or without cooling circuit.

## CONTROLS DESIGNER

for

## AIR CONDITIONING AND GAS HEATING

Thoroughly experienced in original development of thermostatic and electro-mechanical control devices.

Familiarity with AGA, NEMA and UL Requirements desirable.

Permanent addition to present staff, civilian projects.

Send complete resume, salary expected, to

Mr. H. G. Wright

West Coast Research & Development Laboratory

## ROBERTSHAW-FULTON CONTROLS COMPANY

9020 Bellanca Avenue  
Los Angeles 45, California



## AMERICAN-Standard AIR CONDITIONING DIVISION

ELYRIA, OHIO

American Radiator & Standard Sanitary Corporation



## How Commercial Distributors Handle Financing and Collections

PHILADELPHIA — Fifty-one of 69 distributors use conditional sales contracts, it was found by the National Commercial Refrigerator Sales Association here in a recent survey of members regarding financing policies.

Other 18 reporting members said they used chattel mortgages to some degree.

Five members revealed that 100% of their total sales were made on conditional sales contracts. In all, 39 reported that 50% or more of their sales were on contracts.

Of those using chattel mortgages, only one said all sales were financed this way. Twelve used chattel mortgages for 50% or more of their sales.

As for down payments, 59

distributors require them, four "do sometimes, depending on customer," and one doesn't require any.

### DOWN PAYMENT VARIES

Size of down payment varied from \$1 required by two members up to 50%. Eight members of NCRSA said they required 20% to 50% down; 11, 20%; 11, 25%; 11, 15%; four, 25% to 35%; seven, 10%; one, 30%; one, 33 1/3%; six, 10% to 50%.

A conditional form of purchase order on open account sales is employed by 29 members, "occasionally" by five, but not by 35 firms.

Promissory notes are secured by 24; seven use judgment notes, and several others use security or similar notes.

"In most cases the promissory notes and others are attached to the purchase order form or conditional sales contract," NCRSA explains.

Ten members require landlord waivers on large installations; 48 do not obtain waivers, and five members "sometimes" get them.

### SOME SELL PART OF PAPER

Selling of all or part of their financed contracts was reported by 58 members. Seven carry their own paper, three said the factory carried theirs, and one distributor has his own finance company.

There is a considerable variation of the percentage of paper sold to banks and/or finance companies, as well as in dis-

count rates and reserves. Discounts range from 3 1/2% to 10%, mostly 6%. Reserve required went all the way from nothing to 25%.

Percentage of notes receivable unpaid, or contingent liability, in relation to total sales varied from less than 10% reported by four distributors to 87% cited by one.

Forty members charge 6% interest, 12 of these using simple interest. Add-on interest is used by 28.

Twenty-three distributors collect additional interest on payments made after maturity, 10 collect it "sometimes," 22 don't collect it, and one member writes a new contract after maturity.

When payments lag 26 mem-

bers use a meter, and 14 do sometimes.

Methods for collecting accounts, as reported by the majority included some or all of the following: letters, sometimes registered, telephone calls, personal contact, often by salesman, telegrams, coupon books, NCRSA collection bureau, collection agencies, attorneys, replevins, notices from bank or finance company, collectors.

### SOME ASK INTEREST ON PAST DUE ACCOUNTS

Fifty-one members said their contracts call for payment of interest on amounts past due on notes, conditional sales, and chattel mortgages. Interest starts "at once" for five members; after five, 10, 30, 60, or 90 days, six months, and "no set time" were mentioned by others. Rate charged varies from 6% to 10%.

Although some members reported success (100% for two members) in collecting interest on past-due accounts, others did not. Only 10 said charging of interest on amounts past due helped in obtaining prompter payment.

As to whether this practice affected customer relations, some NCRSA members said it had an adverse effect; others said it didn't.

### OPEN ACCOUNTS

On open accounts, 13 members said their contracts call for interest on amounts past due; 39 do not; two ask for it on some contracts. Only three actually charge this interest, however, although 17 said they do sometimes. Rate ranges from 6% to 10%.

Only six distributors reported 100% to "fair" success in collecting this interest on amounts past due, while 13 said their success was "not much" to "none." Eight said charging interest helped in obtaining payment; seven said it didn't; four said it did sometimes.

### Frozen Breaded Steaks Prove Profitable Item

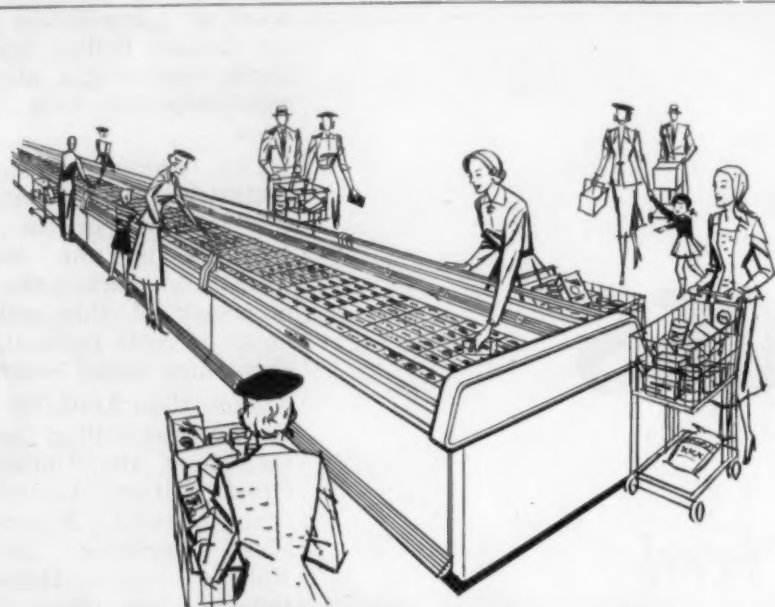
DENVER — Frozen breaded steaks, introduced to the local market early this year by the Farmer Pete Packing Co., have proved to be a profitable specialty, according to Meyer Wolfson, head of the firm.

Beef, veal, and pork steaks are offered, packaged in boxes of three to retail at 69 cents.

The meat is first blast frozen at -30° F. in a 20 by 20-ft. tiled freezer designed and built by Wolfson himself. They are held at this temperature for six hours.

Then the steaks are dipped in a liquid mixture of breading dough, eggs, and other ingredients. The mixture covers the meat evenly and freezes instantly, Wolfson said. The breaded steaks are returned to the freezer to complete the freezing process before being packaged.

In addition to the retail package, Farmer Pete also offers the steaks in institutional 1-lb. packages.



*From All  
Angles...*

## the NEW McCray Island Cases Mean More Frozen Food Sales!

**MORE VISIBILITY** of product — the only island case with glass on both sides. Glass has correct angle for full vision.

**MORE CAPACITY** per lineal foot—the 11-ft. case holds over 1650 average size frozen food packages.

**MORE SHOPPING APPEAL** — low kitchen counter height reach-in, with swept-back glass front, follows body contour; invites shopping.

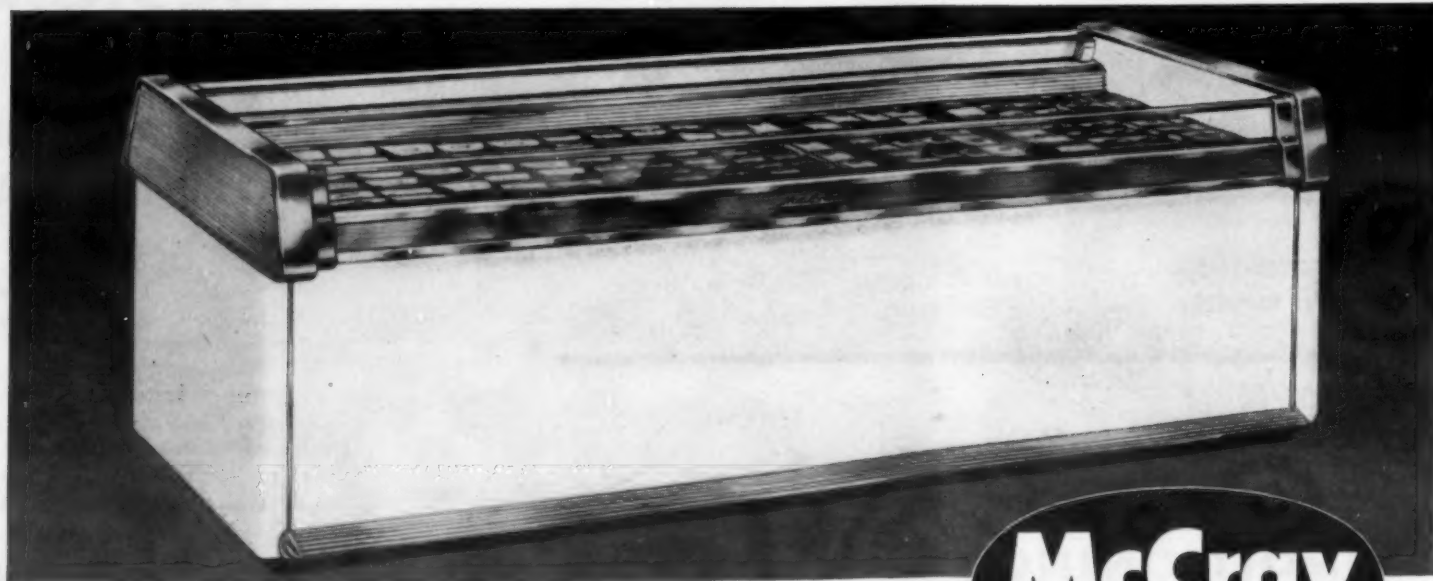
**MORE SHOPPING AREA** — customers can approach this case from all angles—from both sides and ends.

It all adds up to more dollars earned for dollars invested. Write for literature on new McCray cases. We'll send name of your nearest McCray distributor.

**MCCRAY REFRIGERATOR CO., INC.**

701 McCray Court, Kendallville, Indiana

Sales Offices in Principal Cities • See Classified Phone Book



65 Years of Leadership in Building **DEPENDABLE** Commercial Refrigerators and Display Cases

**McCray**  
K O L D F L O



## Product Section Chairmen Named By ARI Groups

HOT SPRINGS, Va. — Chairmen for the coming year were elected by eight of the 11 product sections of the Air-Conditioning & Refrigeration Institute which met during ARI's annual meeting here. They are:

**Tubular Products:** E. W. Ervasti, Wolverine Tube, Div. of Calumet & Hecla, Inc., re-elected chairman; Ray C. McCullough, Bohn Aluminum & Brass Corp., vice chairman.

**Flow Control Valves:** H. F. Spoehrer, Sporlan Valve Co., re-elected chairman.

**Temperature Controls:** James Manecke, Ranco Inc., chairman.

**Refrigerants, Lubricating Oils, and Chemicals:** D. P. Barrett, The Davison Chemical Co., Div. of W. R. Grace & Co., chairman; L. D. Callans, General Chemical Div., Allied Chemical & Dye Corp., vice chairman.

**Air Conditioning and Refrigeration Systems:** R. K. Serfass, York Corp., chairman; E. R. Michel, Worthington Corp., vice chairman.

**Heat Transfer:** Vincent Day, Carrier Corp., chairman; Ben M. McDougall, Kennard Corp., vice chairman.

**Room Air Conditioners:** William C. Egan, Carrier Corp., chairman; E. G. Doris, Mitchell Mfg. Co., vice chairman.

**Valves, Driers, Fittings, and Accessories:** C. V. Gary, Henry Valve Co., re-elected chairman; W. A. Siegfried, Superior Valve & Fittings Co., vice chairman.

## McCallister To Head L.O.F. Industrial Sales

TOLEDO—Robert V. McCallister has been appointed sales manager of equipment and industrial sales of the L.O.F. Glass Fibers Co., according to R. W. Capaul, vice president and sales manager of the company's General Products Div. He will headquarter at the general offices.



McCallister

In his new capacity, McCallister will supervise sales of the company's thermal and acoustical insulation products used in freezers, refrigerators, air conditioners, and similar equipment and all types of industrial insulation applications in commercial buildings and factories.

## Ala. Hospital Completes Air Conditioning Program

FLORENCE, Ala. — Officials of Eliza Coffee Memorial hospital announced recently that Mitchell-Hollingsworth Annex has been air conditioned.

R. C. Barnes, hospital superintendent, said this completes a long range program to air condition the hospital, the annex, and the Frank M. Perry Nursing Home. Mitchell-Hollingsworth is used as a convalescent home.

## Capitol Building at Harrisburg Gets Cooling

HARRISBURG, Pa. — Gov. Leader recently signed into Pennsylvania law a bill appropriating \$400,000 to complete a central air conditioning system in the State Capitol building.

During the past several years, some \$3,000,000 has been spent in renovating the plumbing and electrical systems and for installation of a hot-cold network of pipes and radiators to handle the combined job of heating and cooling the building.

Previous legislation had eliminated the allocation for the central cooling plant, which was not needed pending completion of the distribution facilities which circulate hot water in winter, cold water in summer.

## 3 New Cases Double Store's Frozen Food Volume

HARRISON, Ark. — Hudson's Grocery here more than doubled its frozen foods business in the first month after it installed three new Schaefer cabinets, Doug Hudson, one of the operators of the store, reports.

Said Hudson, "Our sales of frozen foods for the first month after the installation of these new cabinets was \$845. Just the month before, they were slightly under \$400. Our sales of packaged ice cream were also up 100%."

The cabinets were supplied by Electric Utilities Corp., Schaefer, Inc. distributor in Kansas City and Tulsa. They were installed by the Golden Rich Ice Cream Co., the announcement indicated.

## Edison Cooling Takes On G-E Heat Pump

BLOOMFIELD, N. J. — Distribution for the General Electric "Weathertron" heat pump in the New York metropolitan area was set up recently as Edison Cooling Systems, Inc. was franchised to handle Weathertron sales and service in Manhattan, Bronx, and the lower part of Westchester county.

The appointment will make Edison Cooling the northernmost distributor on the east coast and follows closely the announcement of new Weathertrons improved up to 60% in heating capacity, G-E said.

Leslie Ross, president of Edison Cooling Systems, sees a tremendous potential in the New York area.

## Westerman Now with Brunner Field Office

UTICA, N. Y. — H. M. Westerman, Gibbsboro, N. J., has been appointed a sales representative for Brunner Mfg. Co. of Utica and The Brunner Co. of Gainesville, Ga.



Westerman

The appointment was announced recently by Frank C. Hawk, vice president in charge of sales.

Westerman will be headquartered in the Philadelphia office of the company under the charge of Frank E. Wilson, district manager, according to the announcement.

*for Peak Performance*  
**BUY SPORLAN**  
**SOLENOID VALVES**  
*for Sporlan offers you...*  
**THRU and THRU QUALITY BUILT COILS**

- ① Extra heavy winding provides reserve protection against burn out.
- ② Layer wound magnet wire, plus cotton thread spacing for maximum insulation.
- ③ Twice dipped varnish- and -baking provides complete impregnation.
- ④ Final protective sealer dip and bake assures moisture-proof seal.

*plus*  
**PROVEN SPORLAN ENGINEERED COMPONENTS**

- ⑤ Extremely simple design... few parts.
- ⑥ Sturdy... take-apart construction.
- ⑦ Floating type stem and plunger assembly.
- ⑧ Tight closing, pin and seat polished to a super finish.

*Any size, any refrigerant or connections... SPORLAN has a Solenoid Valve to Fit Your Job!*



**Sporlan**  
**VALVE COMPANY**

7525 SUSSEX AVE.  
ST. LOUIS 17, MISSOURI

EXPORT DEP'T: 89 BROAD ST., NEW YORK 4, N. Y.



BUY SEVERAL SPORLAN SOLENOID VALVES FROM YOUR WHOLESALER TODAY, AND BE SURE OF PEAK PERFORMANCE ON EVERY SOLENOID INSTALLATION



# How Large Firm Keeps Tab on Service Costs (2)

JOB ADDRESS		TO BE MADE	CALL NUMBER 16395
USER		FLOOR	USER'S PHONE
INVOICE TO		ADDRESS AND ZONE	
AUTH. BY		TITLE	PHONE
DEALER		DATE INSTALLED	PARTS GUARANTEED BY
SERVICE		COMPLAINT	
PREVIOUS WORK			
DATE TAKEN	TIME TAKEN	TAKEN BY	DATE ISSUED
CARRY FOR	OKAY	DATE COMPLETED	DATE RECEIVED
TIME ISSUED		TIME RECEIVED	
SERVICEMAN'S NAME - NO.		SERVICEMAN'S NAME - NO.	

FIG. 2—When requests for service are received at Refrigeration Maintenance Corp. in Chicago, data is noted on this call ticket, which is made out in quadruplicate. The call ticket measures 7 by 4 1/4 in.

By C. Dale Mericle  
When a customer phones for service, the call-taker fills in the pertinent data on a call ticket form. (See Fig. 2). This form measures 7 in. wide by 4 1/4 in. long. It is bound with pre-set carbons so that four copies are made—one original and three carbons. The call tickets are numbered serially. Spaces are provided for the

This is the concluding instalment of an article describing the records and controls used by a large service firm to keep track of various phases of its service operation. Although the firm discussed here is a large one, some of the ideas may well be adapted to smaller companies.

CODE		LABOR	MATERIAL	REFRIGERATION MAINTENANCE CORPORATION	
206				331-27 EAST GRAND AVENUE CHICAGO 11, ILLINOIS	
204				ALL PHONES—DAY OR NIGHT ONE SEARCH IS FIVE HOURS FOR 24 HOURS THE SEET TERMS: NET CASH OR RECEIPT OF INVOICE	
201		SELLING	COST	WORK ORDER	CONTRACT CLASS
200				STREET NUMBER	DATE ISSUED
202				APPL.	SERVICEMAN'S NUMBER
203				UNIT MODEL NO.	UNIT SERIAL NO.
204				UNIT SERIAL NO.	UNIT SERIAL NO.
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CALL NO.	DATE OF CALL	WORK DONE	CONTRACT CLASS	CONTRACT NO.	QUANTITY
1	7/11/55	REPAIR	1	155640019470	1
2	7/11/55	REPAIR	1	155640019470	1
3	7/11/55	REPAIR	1	155640019470	1
4	7/11/55	REPAIR	1	155640019470	1
5	7/11/55	REPAIR	1	155640019470	1
6	7/11/55	REPAIR	1	155640019470	1
7	7/11/55	REPAIR	1	155640019470	1
8	7/11/55	REPAIR	1	155640019470	1
9	7/11/55	REPAIR	1	155640019470	1
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51	7/11/55	REPAIR	1	155640019470	1
52	7/11/55	REPAIR	1	155640019470	1
53	7/11/55	REPAIR	1	155640019470	1
54	7/11/55	REPAIR	1	155640019470	1
55	7/11/55	REPAIR	1	155640019470	1
56	7/11/55	REPAIR	1	155640019470	1
57	7/11/55	REPAIR	1	155640019470	1
58	7/11/55	REPAIR	1	155640019470	1
59	7/11/55	REPAIR	1	155640019470	1
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61	7/11/55	REPAIR	1	155640019470	1
62	7/11/55	REPAIR	1	155640019470	1
63	7/11/55	REPAIR	1	155640019470	1
64	7/11/55	REPAIR	1	155640019470	1
65	7/11/55	REPAIR	1	155640019470	1
66	7/11/55	REPAIR	1	155640019470	1
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96	7/11/55	REPAIR	1	155640019470	1
97	7/11/55	REPAIR	1	155640019470	1
98	7/11/55	REPAIR	1	155640019470	1
99	7/11/55	REPAIR	1	155640019470	1
100	7/11/55	REPAIR	1	155640019470	1

FIG. 4—This is a tabulating card (7 3/8 by 3 1/4) punched for a typical service call on a maintenance contract.

## Keeping Service Records--

(Continued from preceding page) sent to the accounting department of course, but other calls are scheduled for later.

If this call is one of the latter, the fourth copy of the call ticket is pulled off and filed in the control file by street address. The top three copies also go in the control file but under the date the work is to be done.

### One Copy Filed by Street Address

"Filing one copy by street address," Klotz explains, "permits the dispatch room to keep track of that call. If the customer calls back wanting to know why the serviceman hasn't arrived yet, the girl refers to this copy of the call ticket which will show the date promised."

Generally, commercial calls and emergency domestic calls are dispatched immediately or within a few minutes of being received. Ordinary domestic service work is done the following day. In the busiest season, however, some calls have to be scheduled a few days in advance.

The day before the call is to be made, the three copies of the call ticket are pulled out of the date file. Corresponding fourth copy is removed from the address file and stapled to the other three copies. Then all four copies go to the dispatcher, who then handles them the same way as the call tickets given him immediately after receipt.

### Dispatcher Assigns Call

The dispatcher assigns the call to a serviceman, noting on the call ticket the date and time issued as well as the serviceman's name and number.

Two top copies are retained by the dispatcher, who clips them to a revolving board (it has four sides) under the serviceman's number.

Third copy of the call ticket goes to the serviceman. Since most calls are dispatched by phone, the serviceman doesn't pick up his copy of the call ticket until he gets into the office, which might not be until the next morning, or even later in some cases. This copy, then, is placed in a file for the serviceman to pick up when he does get in.

Fourth copy of the call ticket goes back to the control file where it is filed by street number. This copy stays on file here only one day, as a rule, being pulled out by the night man on the dispatch desk, who makes a record of all calls dispatched during the day, and it is then

sent to the accounting department if it is on a charge account. If these slips are not a "charge," then they are thrown away after this record has been made by the night dispatcher.

When the serviceman has completed his call, he phones



AFTER monthly reports are made from tabulating cards, latter are filed by Mary Sivil.

## Service & Supplies

the dispatcher, who notes the disposition of the call on the two copies of the call ticket he had clipped to the board under the serviceman's number.

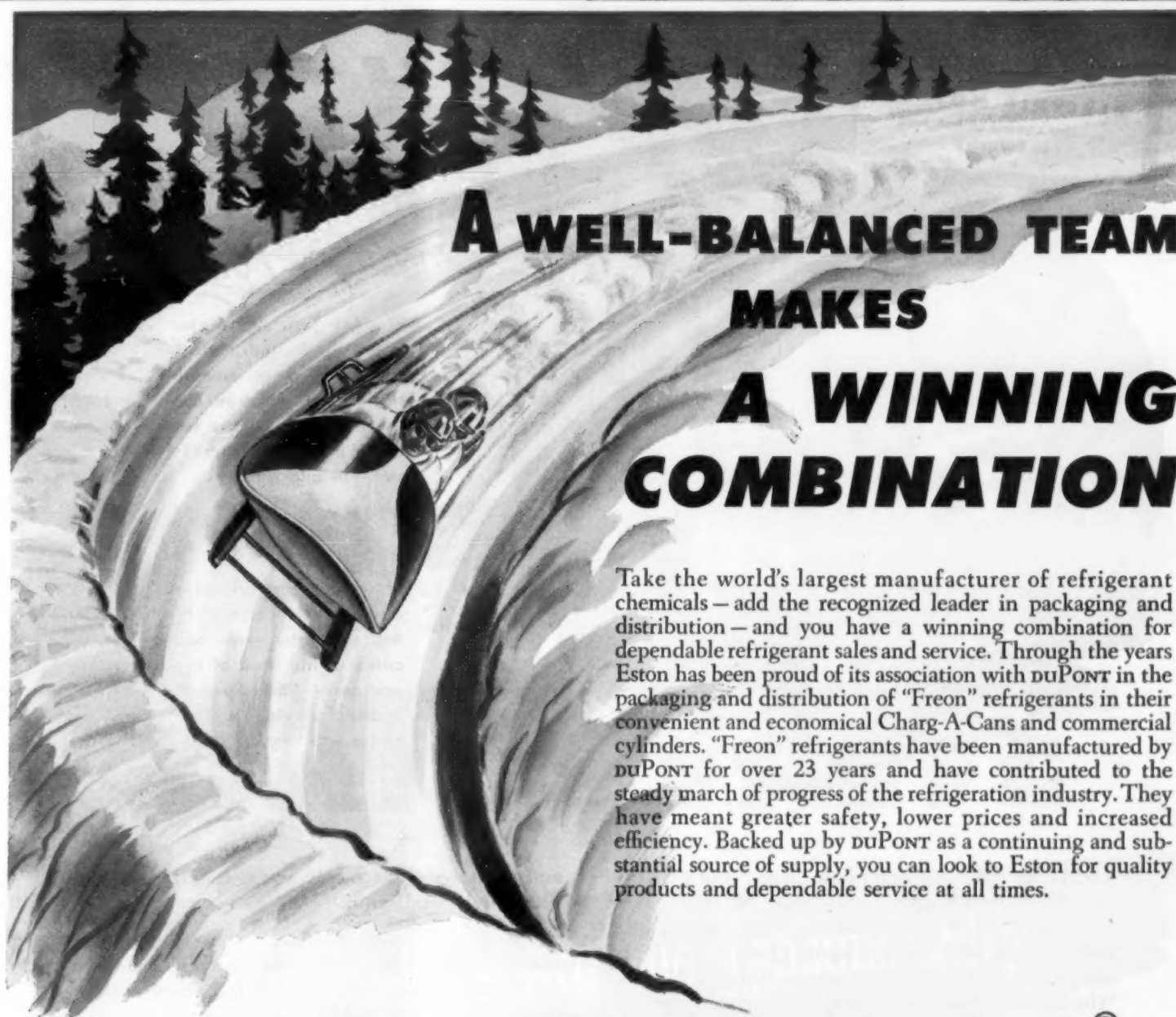
Original copy is then filed in the control file by street number, where it stays for a period of three to six months.

### Work Ticket

Second copy of the call ticket, after the jobs been completed, is eventually attached to the work ticket (see Fig. 3) when the latter is turned in by the serviceman. In the meantime it is kept on file by the dispatcher.

The company makes provision in this entire procedure for service calls that can't be completed by the serviceman on his first trip. This can happen because a special part is needed, for example.

The serviceman's work ticket (Concluded on next page)



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## Keeping Service Records--

(Concluded from preceding page) (Fig. 3) is 8½ by 11 in. and is bound in four copies with pre-set carbons. The work tickets are numbered serially, this number serving as the invoice number.

Top half of the form provides spaces for name and address of the customer, type of contract, make and serial numbers of equipment, description of work done, etc.

Bottom half provides for listing material used on job and hours of work by serviceman.

The customer is required to sign the work ticket at the bottom after the job has been completed.

Second copy of the work ticket is given to the customer. It serves as an invoice on charge accounts, as a receipt on c.o.d.'s,

or merely as a record of work done on service contracts.

Bottom half of the third copy is designed to serve as a material requisition which the serviceman turns in to the stockroom to replenish his car stock or to order special parts. In the latter case he attaches his copy of the call ticket to the material requisition.

### Serviceman Turns All Copies In to Stockroom

After the job is completed, the serviceman turns in all three copies of the service work ticket to the stockroom, where it is matched with the material requisition section, if that has been used, before being sent to the service department.

In the service department the

work ticket is matched up with the second copy of the call ticket. A time-keeper then checks the time recorded by the serviceman on the work ticket against (1) a separate time ticket which each serviceman turns in every day, and (2) the dispatcher's records of assignments.

Work ticket is then sent to the billing and accounting department for costing and invoicing (if a charge account), and eventual filing.

"There is virtually no problem of record-keeping on c.o.d.'s and only a moderate amount of work on charge accounts," Klotz points out. "It is the non-billed work, which includes warranty and maintenance contract service, where careful record-keeping and cost analysis are so important."

This is where the tabulating system comes in.

Refrigeration Maintenance is using the Remington Rand tabulating system. This involves a machine with a keyboard similar to a typewriter on which the tabulating cards are punched and various sorting and tabulating machines.

Only the punching machine is used by Refrigeration Maintenance. The sorting and tabulating of the punched cards is done by the Customer Service Dept. of Remington Rand, located, luckily, within walking distance of the firm.

Every day a Refrigeration Maintenance employee punches a tabulating card for each service call made on "non-billed jobs" (warranty and service contract). A typical card is shown in Fig. 4.

The card is punched to show the call number (serial number of call ticket), date of call, work done, type of contract, contract

number, invoice number (serial number of service work ticket), serviceman's number, and cost of labor and materials.

About once a week or oftener the accumulated cards are taken to the Remington Rand office where a duplicate set of cards is automatically punched. The original cards are returned to the contractor.

At the end of the month Refrigeration Maintenance informs Remington Rand when the last cards for that month have been punched, and the latter then begins running off the desired reports, all of which are done automatically, of course.

### Month-End Reports Ready In 3 or 4 Days

Within three or four days all the reports wanted by the contracting firm have been prepared. As mentioned at the beginning of this article, these include reports on activities of the individual servicemen, gross profit figures on all contracts, etc.

The value to Refrigeration Maintenance of being about to see at a glance just how the firm is making out on each contract and how each serviceman is doing is inestimable.

In addition to these reports, the company has an inventory report run off every month for each of the contracts it has with ice cream companies for servicing of their cabinets.

Separate tabulating cards are employed for this purpose.

"It is important for us to keep track of these," Klotz explains, "because ice cream companies are continually replacing old cabinets with new ones and moving them from one 'stop' to another."

Obviously, if the company didn't keep an accurate, up-to-date inventory record of this equipment, considerable confusion could develop in a hurry.

A copy of the inventory report is sent to each company with the monthly bill.

(The End)

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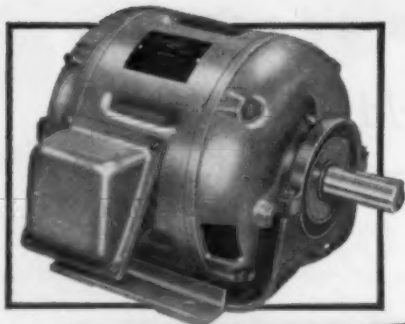
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### Hotpoint Booklet Has Laundry Commercials And Advertising Mats

CHICAGO—A new eight-page ad mat-radio commercial booklet enabling dealers to obtain a well-coordinated series of advertising and radio commercials on all models of automatic washers and dryers has been announced by Hotpoint Co.

According to D. D. Thompson, merchandising manager, home laundry section, Hotpoint, all ads in the new mat booklet have been pre-tested.

"Ads which have been incorporated into the new booklet are those which pulled the greatest store traffic over a given period of time," Thompson said.

The booklet contains 13 ads which are available in two sizes and some available in three sizes.

Several of the ads have numerous additional headlines that can be inserted to change the copy.

One special ad has been designed to capture the male "do-it-yourself" market.



## Retailing Frozen Candy

**Switch from Grocery to Drugstore as Market Found Necessary; Policy on Cabinets Changed**

CHICAGO — Frozen candy of each dollar of sales to promote the candy and ultimately has a future if it is merchandised as a perishable novelty product and if the retailer is thoroughly sold on its possibilities for exploitation.

This is the conclusion of Fanny May Candy Co., which has been promoting frozen chocolates in a small but growing way since 1950. During this time, says Fred J. Arnold, vice president of the Chicago concern, many difficulties have been encountered but each has been overcome in its turn and the experience gained is beginning to pay off.

The story of how Fanny May wholesales frozen candy was related by Arnold at the recent 72nd annual convention of the National Confectioners Association in Chicago.

"We started out blissfully ignorant of everything about selling boxed frozen chocolate," said Arnold. "We did not know it could not be done, so we did it."

### To Help Summer Sales

The idea for this pioneering venture was born, he related, following analysis of a "fan file" of inquiries and some requests to "please send us a price list. We also saw in the idea a means for improving summer business and smoothing out the ups and downs in our production curve," he noted.

It was in March, 1950, Arnold said, that this "hybrid" frozen candy project was started at Rockford, Ill. Rockford is within the trade territory where the Fanny May retail stores are well known. However, since the whole idea was still untried, it was decided to conceal the company's identity with the project under another name.

### First Through Birds Eye

"In doing this we wanted to determine if frozen candy could be sold on its own merits," said Arnold. "In Rockford the Piggly-Wiggly grocery chain has considerable standing and we made a connection with them to test the possibilities. Distribution was handled through the Birds Eye organization."

The innovation was announced in full-page local newspaper advertisements and further promoted by a six-week newspaper advertising campaign. The response exceeded expectations and one week after launching the Rockford test, a second outlet, as planned, was opened in Columbus, Ohio.

### Big Volume Seen

Here, too, an extensive advertising campaign introduced the novelty. The company's advertising agency, in appraising the market potential, enthusiastically estimated that Fanny May could sell 40 million pounds of frozen candy a year.

"For a time we thought so, too," Arnold said. "Then sales in Rockford and Columbus began to lag and sag. The novelty was wearing off and consumers had lost interest. We found we were spending 90 cents out

ject, although this was still not revealed to the public generally.

### Cabinets for Drugstores

In the grocery stores, the existing frozen food cabinets had been utilized for holding the candy, but since drugstores are not usually equipped with refrigeration for frozen products, the company installed cabinets to hold the new line.

"In these new drugstore outlets we were soon selling a little candy," Arnold continued, "and this encouraged us to open still more accounts. By the end of 1950 we had 20 drugstores selling our frozen candy. They all showed considerable life from the start and have since become good accounts."

In 1951 it was decided to make known Fanny May's connections with the product, so to the brand name "Dorothy Holman Frozen Candy" was added the

line "From the Kitchens of Fanny May." Subsequently "Dorothy Holman" was dropped and the product is sold now only as "Fanny May Candies."

### Changed Cabinet Policy

Originally dealers had been charged \$5 a month for use of the refrigeration equipment installed by the company with an option to buy the freezer within three months. This option was dropped, Arnold said, and the freezer is now being sold outright to the dealer. Fanny May also discontinued maintenance of the equipment.

To get dealers interested, Arnold said, has been a tremendous educational job. Both they and the customers confuse frozen candies with frozen desserts. People, too, do not look for frozen products in a drugstore. Also, the frozen candy has to be sold at a price some-

what higher than that for candy in its customary condition.

Outlining other difficulties, Arnold said druggists complain that the margin is not enough to permit them to do the type of promotion they are accustomed to doing; they are inclined to load up with other candies for seasonal sales and give decreased attention at that time to their frozen Fanny May line ("It's frozen, isn't it? It'll keep" is their common position); and since freezing requirements vary for different types of candy, it has been hard to offer assortments.

"On the whole, though," Arnold summed up, "if the dealer is genuinely interested and enthused about selling frozen candies and makes an aggressive effort to build his business up, we believe it will sustain itself. It has a future only if considered as a novelty product."

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## Difficult Dilemmas Disturb Heating Specialists

Although the air conditioning business has been pioneered primarily by the refrigeration industry, heating people now are walking into it—tentatively, at least. For some of them it's either get into air conditioning or retire. How do they stack up?

From the outside it would appear that the home heating business is healthy. Last year more than a million warm-air furnaces were installed in this country; and our unabated building boom seems to assure a ready market during the foreseeable future.

Yet, all is not well along this particular Potomac. A few reasons:

### Where Are Selling Techniques?

Traditionally those localities who install furnaces are, in the argot of the trade, "all back and no front." In the past they have fulfilled needs, rather than sold families something they didn't know they wanted (our definition of specialty selling). Presently, in competition with aggressive and entrenched refrigeration salesmen, they find themselves in a new and tougher league. And they are unfamiliar with the techniques of sales promotion.

Another major problem for heating equipment installers is the multiplicity of manufacturers with whom they deal. Most are small. Less than two dozen report annual sales in the neighborhood of \$2,000,000. The latter compete with at least 350 family-type manufacturers whose volume is even tinier.

### What About the 'Giants'?

Nearly all manufacturers dedicated to the heating business complain that their profit picture is sad now, has been declining steadily, and threatens to get worse. Entry of the giant corporations (like General Motors, General Electric, Westinghouse, Chrysler, and Carrier—plus formidable mergers, present and potential) is frightening to most of the old-line heating folk we have interviewed lately.

"The advent of all-year heating and cooling," one such told us, "will life-save a few of us, wreck many others. Relatively few family corporations will have the financial resources to survive in this dog-eat-dog game. We've been in business for 87 years,

and boast unusual liquidity. We might be able to hang on—but a lot of our competitors AND contractors won't, in the face of this spanking new competition."

What this man failed to mention was that his firm (like many of his competitors) is guilty of undermining local contractors. How? By selling more than half his production directly to speculative or government-subsidized builders. The latter often aren't good installers, and rarely provide service facilities. Local contractors reap a poor harvest in consequence. No wonder they are amenable to siren songs from pioneering air conditioning manufacturers!

### Too Many Models

Another problem which besets heating contractors is that they must handle too many models. Most furnace manufacturers catalog from 60 to 180 types and sizes! Also, of course, the seasonal nature of the business is a trial. Peak months (August, September, October) account for nearly half the total annual volume. November, December, January, February, March, and April are dismal months indeed.

Lennox, biggest in the business, is the only furnace manufacturer which ships more than 100,000 annually. Most others are lucky if they can move one fifth the Lennox volume.

So, you see, veteran heating people have a right to feel apprehensive about competing with the refrigeration-minded concerns who presently regard the air conditioning market as their private domain.

But compete they must. And some, we predict, will make the grade.

### Will Contractors Survive?

What of the heating contractors? They are apprehensive, too. They need to learn new techniques, and teach them to their mechanics. And they must learn how to sell. Mortality rates in this area may be high.

Those heating contractors who do successfully bridge over to air conditioning and specialty selling will be sitting pretty. Year-round air conditioning has a fascinating growth potential for those localities which are well-financed AND patient.

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"I have always felt that whatever the Divine Providence permitted to occur I was not too proud to report. The people are not served by pussyfooting, or by that sort of journalism in which nobody will ask who is the editor of a paper or the writer of an article, and nobody will care."—Charles A. Dana.



## OFF THE CHEST

Pacific Scientific Co.  
1430 Grande Vista Ave.  
Los Angeles 23, Calif.

Editor:

It has been some time since your stimulating editorial of March 21, 1955 on the issue of getting together and establishing an honest standards for our industry and I wonder if any positive steps have yet been taken in this direction by any authorized group or any independent group.

We have in our area of the country a number of small manufacturers who have or will be getting into the packaged unit air conditioning business. Most of these will not have the funds to setup their own private calorimeter room, such that they could make the test to con-

form to ASRE Standards.

Most of them, I am sure, would like to be able to attach an honest and comparative rating on their units. Inasmuch as I spend a lot of my time contacting these people, for personal business, and am also active in the ASRE, I would like to be in a position to pass on recommendations to these people when the situation arises.

From the comments that you have already received, do you have any suitable recommended procedures of a relatively simplified nature that could be passed on at this time? Or, do you know of any independent testing agency that would take on this type of work? Your comments would be very much appreciated.

KENNETH N. ROBERTSON

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## Servel Sales Gain; Begin Repayment of Revolving Credit

EVANSVILLE, Ind.—With a check for \$1,500,000 Servel, Inc. recently started repaying \$6,000,000 borrowed under a revolving credit arrangement with banks in New York, Chicago, and Evansville. The loan is not due until Sept. 30.

Duncan C. Menzies, Servel president, indicated that another \$2,000,000 will be repaid in July, and the final \$2,500,000 in August.

The revolving credit was established in January to provide Servel with operating capital until excess inventories and overdue accounts receivable could be converted into cash.

Servel's sales and shipments of refrigerators and room air conditioners have shown substantial gains in recent weeks, Menzies reported.

Servel room air conditioner sales have shown a recent pick-up. During the past two weeks, orders have been received from distributors for over 64% of all the room air conditioners Servel had on hand in its warehouse. The balance of the company's stock of room air conditioners will be shipped before July 16, Menzies indicated.

During May, sales of Servel gas refrigerator to retail outlets were 71% higher than they were in May, 1954.

During the first half of June, orders received at the factory for gas refrigerators were 50% greater than they were during the same period last year.

Menzies said that operations will benefit from the two-year contract agreed upon between Servel and Local 813 United Electrical, Radio and Machine Workers.

This new agreement provides a total of 12 cents per hour in wage increases over the next two years together with broader recognition of seniority in layoffs and recalls.

## 2-Day Open House Nets 40 Major Appliance Sales

DAWSON, Pa.—Forty major appliances were sold by Burdette's, Inc. here as the result of a two-day open house featuring continuous demonstrations from 2 to 9 p.m. each day.

Newspaper advertisements were used to announce the open house to the public. Homemakers were invited to bring their laundry to the store and have it washed, dried, and ironed.

An electric range demonstration was conducted by a home service representative of West Penn Power Co. She reported considerable interest in the new 40-in. Westinghouse electric range with full-width oven.

Visitors were given potted plants and paring knives, and also cookies baked during the open house, which was held on a Wednesday and Thursday.

In less than a week following the promotion, 40 major appliances had been sold. Don Burdette said he felt that the open house was "directly responsible."

## Package Deal Offers Brides Range and Refrigerator or Freezer In Dealer Promotion

CHARLOTTE, N. C.—June brides got a "break" from some 20 to 25 dealers in this area who adopted a special promotion sponsored by Major Appliance Distributors, Inc. here.

The brides were offered a package deal combining a 30-in. electric range and either a 9-cu. ft. refrigerator or 10-cu. ft. freezer at \$199.95 each on a two-year payment contract.

As a second anniversary present, when the final payment would fall due, some dealers plan to make the final payment and send the couple the paid-up contract plus a small gift.

As an alternative, others planned to stock the freezer free or handle labor and service on the appliances for a year.

## Amana Appoints 2 New California Distributors

AMANA, Iowa—Gough Industries, Inc., of Los Angeles, and San Diego Appliance Distributors of San Diego, have been named distributors for Amana Refrigeration, Inc., it was announced recently.

Gough will handle Amana freezers and room air conditioners in the Los Angeles area, including Los Angeles, Orange, Riverside, San Bernardino, Ventura, Santa Barbara, and San Luis Obispo counties.

San Diego Appliance Distributors will sell Amana freezers in San Diego and Imperial counties.

The Los Angeles firm is headed by P. G. Gough, with R. L. Henry, treasurer, S. T. Bell, vice president, and James Moore, sales manager. Gough also has branch offices in Long Beach and San Bernardino.

## Sales Strengthening Move

## Thor Adopts Direct-to-Retailer Sales Policy, To Introduce Automatic Washer

CHICAGO—Adoption of a new direct-to-the-retailer sales policy by Thor Corp., Chicago manufacturer of major household appliances, has been announced by Henry C. Buckingham, Thor president.

Buckingham said E. C. Bonia, Inc., of New York City, specialist in television and home appliance sales, will handle sales of Thor washing machines, dryers, and automatic ironers. Thor sales formerly were handled through 80 distributors.

Buckingham said all distributorships had been cancelled, in line with the new sales policy.

The Bonia firm will sell through a single major retailer in most communities and cur-

rently is signing up stores to handle the line. Among those assigned Thor products are Vim Appliance Co., New York; Hudson-Ross and Mandel Brothers, Chicago; Leonard's, Fort Worth; and Joske's, San Antonio.

"Our new sales policy is designed to strengthen sales and was put into effect in preparation for the introduction of our new automatic washer in September," Buckingham further indicated.

The new Thor washer is to be manufactured by Avco Mfg. Corp. under a contract signed earlier this year.

Sales of the company's current line also are being handled by Bonia.

you're looking at 5 hermetic compressors



MODELS P91, P6112, P61, P5312  
single cylinder  
hermetic compressors

THE FAMOUS *Tecumseh* PANCAKE  
IN 1/8 — 1/6 — 1/5 H.P.

the same compact dimensions in a greater horsepower range

### HOUSEHOLD REFRIGERATORS

### FREEZERS

### VENDING MACHINES

### WATER COOLERS

Here's another achievement in Tecumseh's constant research to provide the refrigeration industry with functional compressor design and more efficient operation. The Tecumseh "Pancake" 1/8 and 1/6 H.P. compressor, recognized by the industry for its small size, low cost and high capacity, is now available in 1/5 H.P.

This means 5 compressors with the same outside dimensions, and yet offering a choice of 3 different fractional horsepower ratings. Manufacturers of household refrigerators will benefit because they may now use the pancake design on most models, thus saving tooling and production costs. Freezer, water cooler and vending machine manufacturers will be able to

take advantage of the pancake's small size in their design. All will gain needed space and still maintain top efficiency.

Internal spring mountings, force feed lubrication and a new, specially designed piston give smoother, quieter operation. Tecumseh's "Pancake" compressors also feature a welded steel shell which dissipates motor heat. This is aided by the cooling action of the suction gas and in some cases an oil cooler is added for faster cooling action and better efficiency.

See your Tecumseh representative for complete information on how you can save time and money by standardizing your production line with the flexible Tecumseh pancake.

• over 21,000,000 Tecumseh compressors in use today

The World's Largest Producer of  
Compressors for the Refrigeration Industry

**TECUMSEH PRODUCTS CO.**

EXPORT DEPT.—P. O. Box 2280, 24530 Michigan Ave., W. Dearborn, Michigan

Marion, Ohio  
Tecumseh, Michigan  
Danville, Illinois



**'Open Letter' Ad Seeks Service Contracts**

RICHMOND, Va.—Promoting air conditioning service contracts in an "open letter" type newspaper advertisement, Catlett-Johnson Corp. here recently pitched this message to businessmen:

"It would be fine if we could always put in a perfect job—no troubles—no call back jobs.

We do have a high percentage of jobs that start right off and perform as planned. But we also have some troubles that cause delays and inconvenience to our clients.

"We believe that the way an organization meets this test is the true measure of its right to existence. Unless we had performed reasonably well, we could not have been successful in this business for 19 years."

**Hugh Paul Heads Technical Sales Service for L. O. F.**

TOLEDO—Hugh W. Paul has been appointed manager of technical sales service of L.O.F. Glass Fibers Co., according to J. M. Johns, vice president and director of sales.

Paul will supervise all technical service to the sales divisions and customers of the firm.



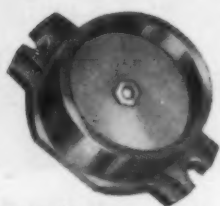
## Appliance Dealer Says KLIXON Protectors Keep Customers Happy

WHITE PLAINS, N. Y.: Mr. Jack Leibert of Leibert Bros. speaks from many years of experience when he gives Klixon Protectors outstanding credit for protection. He says:

"In my 15 years in the appliance business I have found Klixon Protectors invaluable in saving motor burnouts and in consequence leaving our customers happy."



Manual Reset



Automatic Reset

**KLIXON**

### Klixon Protectors Reduce Service Calls and Repairs by Preventing Motor Burnouts

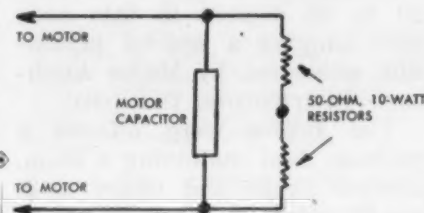
The KLIXON Protectors, illustrated, are built into the motor by the motor manufacturer. In such equipment as refrigerators, oil burners, washing machines, etc., they keep motors working by preventing burnouts. If you would like increased customer-preference, reduced service calls and minimized repairs and replacements, it will pay you well to ask for equipment with KLIXON Protectors.

**METALS & CONTROLS CORPORATION  
SPENCER THERMOSTAT DIVISION**

2407 FOREST STREET, ATTLEBORO, MASS.

## SLANTS ON SERVICE

"Slants on Service" is a "package" devised by the NEWS to meet the needs of its busy readers in the service and contracting business.



### Resistors on Capacitor Can Quiet Blower Motor

Noise created by an air conditioning system can be a serious problem in some applications. It can be caused by a variety of things.

An unusual one described in a recent issue of the NEWS was caused by the blower motor and occurred just before the blower came to a stop.

According to Henry A. Porzio, service manager for Typhoon Air Conditioning Co., Inc., as the motor slowed down, the starting switch kicked in while the motor was still turning at a high speed. This set up a counter e.m.f. (electro-motive force) which resulted in a vibration.

This is characteristic of some capacitor type motors, Porzio says.

His solution was to install a wire-wound resistor in parallel with the capacitor of the blower motor, the resistor tending to absorb or discharge the capacitor as the starting switch kicks in, thereby bringing the motor to a smooth stop.

A News reader in Monterrey, Mexico, asked for specific details:

"Since we are having a similar problem with two 3/4-hp. motors, we would appreciate if you could tell us what type and what size of resistor we were to connect in parallel with the starting capacitor of a 3/4-hp. motor."

Porzio advises:

"Obtain two 50-ohm, 10-watt

resistors for each motor. Take two resistors and connect them in series and, in turn, parallel them with the motor capacitor.

"Actually, you could obtain a 100-ohm, 20-watt resistor, but then a resistor of this size would be too large to fit inside the capacitor housing. Therefore, we recommend the two 10-watt resistors."

### Worthington Moves Midwest Engineering, Service Division

CHICAGO — Worthington Corp.'s Midwest Regional Engineering and Service Div., formerly located at 400 W. Madison St., has been moved to new and air conditioned quarters at 6124 N. Pulaski Rd. This expanded operation will be under the direction of L. R. Dise.

A new and extensive stock of air conditioning and refrigeration parts and mechanical transmission products will be added.

The Chicago district sales office under the direction of W. C. Cheek will continue at 400 W. Madison St.

### Century Names Hyett, Olive To Field Posts

CEDAR RAPIDS, Iowa—Century Engineering Corp. here has announced the appointment of Stanley R. Hyett of Jackson, Mich. and William D. Olive of Omaha as sales representatives.

Hyett will represent Century heating and cooling lines in the lower Michigan peninsula and part of northwest Ohio.

Olive will be the Century representative in Kansas, Nebraska, and the westernmost counties of Iowa and Missouri.

### Extra-Tough JOBS Call for EXTRA-DEPENDABLE POWER

The more you have to gain through uninterrupted performance, the more you need the extra dependability of Red Seal® heavy-duty air-cooled power. Carter center-bowl type carburetor, improved manifolding, valving and cooling, join with greater displacement to give you more "lug" at low speeds—more usable power at high—greater dependability and economy throughout the entire range.

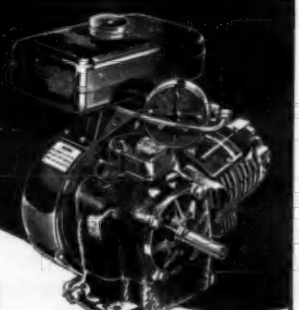
\*TM REG. SERVICE FACILITIES AND

RED SEAL PARTS AVAILABLE EVERYWHERE



**Continental Motors Corporation**

AIR-COOLED INDUSTRIAL ENGINE DIVISION  
12800 KERCHEVAL AVENUE • DETROIT 15, MICHIGAN



MODEL AUBS  
NOTE COMPACTNESS—This 3-h.p. engine is 13 1/4" high.

#### OPTIONAL RED SEAL FEATURES

Patented, exclusive Context® external ignition system, instantly accessible for adjustment or repair . . . Automatic ignition cut-off stops engine if oil level falls dangerously low . . . New, sure-grip recoil starter assures instant starting every time . . . 6:1 reduction gear may be mounted in any of four positions . . . Engines may be had for operation on kerosene.



# What Electric Utilities Are Doing To Help the Dealer Sell

LOS ANGELES—With the electric utility industry now having 21.5% more capacity than required to meet peak-load demand and with more capacity being added, many power firms in various parts of the country are intensifying their efforts to increase home use of electricity. Considerable interest in residential sales promotion was shown at the Edison Electric Institute's annual convention held here recently.

## Residential Market More Profitable

Industrial customers use around 85% more power than home consumers. But the residential market is more profitable and more stable, it was pointed out.

Air conditioning, including the heat pump, is getting particular attention in many cases.

Florida Power Corp., for example, has been promoting the heat pump for some time. This campaign is the main reason that the company's sales per residential customer are now almost 10% above the industry average, according to W. J. Clapp, president.

Much of Dallas Power & Light Co.'s growth in residential sales is credited to air conditioning. Its average home customer last year used 20% more kilowatt-hours than the national average and more than twice the company's 1946 figure.

## 'Electric Living Centers'

One outstanding merchandising program is being conducted by Southern California Edison Co. In one phase of this program, the company maintains "electric living centers" at district offices in its territory.

Here, high school girls learn how to use modern appliances and housewives gather for audience-participation radio shows. It is also planned that tract development salesmen will use the center to learn the features of all-electric kitchens so they can make effective sales presentations to prospective homeowners.

Last January, the company formed a sales staff to call on home builders and work with appliance distributors. A cooperative advertising plan was worked out under which the utility takes newspaper and billboard space to promote electric features in certain tract developments.

## Utility Points to Sales Traceable to Its Promotion Efforts

Southern California Edison, which is aiming for \$3.4 million in new residential business this year, estimates that sales of about 10,000 ranges, 8,000 dishwashers, 7,000 refrigerators, and 7,000 dryers are traceable to its builder-promoting program.

Other utilities which are promoting residential sales aggressively include West Penn Power

Co., Pittsburgh; Union Electric Co. of Missouri; Northern States Power Co., Minneapolis; Cleveland Electric Illuminating Co.; and Connecticut Light & Power Co.

Under its strong residential sales program, West Penn Power stages as many as 1,000 lecture-demonstrations each year for dealers' appliance salesmen. The utility is giving heaviest support to water heaters, ranges, clothes dryers, and food freezers.

In Missouri, Union Electric Co. is sponsoring contests for dealer salesmen. Cleveland Electric Illuminating Co. recently completed a six-week dryer cam-

paign which featured a money-back guarantee. Only on purchaser out of 2,000 asked for a refund, it was reported.

Northern States Power Co., which works closely with appliance dealers, sponsors fishing trips twice a year for the dealers with best sales records.

## Ad Cooperation Stressed

Sherman Knapp, president of Connecticut Light & Power Co., said his company has stepped up its residential sales program considerably in the last few years. The firm stresses cooperation with dealers in advertising, displays, and home service for water heaters, automatic wash-

ers, and various other items.

Another productive promotional program is being carried out by Public Service Co. of Oklahoma. The utility has developed a "tip-slip" plan under which its 2,000 employees and their families learn sales techniques at periodic meetings. Then they go to work on friends and neighbors in an effort to get them into dealers' stores.

When this effort results in a sale, the dealer makes out a special slip for the utility. The employee who brought the customer to the store gets extra compensation. Said R. K. Lane, utility president: "Our employees put about \$385,000 worth of business on our lines last year."

Since inadequate wiring in many residences is the chief roadblock to greater use of electricity in the home, many utilities are promoting adequate wiring programs.

## Meat Institute Chart Lists Maximum Storage Life of Frozen Items

CHICAGO—A chart showing the maximum period for storing various frozen meats at 0° F. has been prepared by the American Meat Institute.

Some of the frozen meats listed and their maximum storage periods are: beef, 6 to 8 months; ground beef, 3 to 4 months; pork sausage, 3 to 4 weeks; liver, heart, tongue, etc., 3 to 4 months; smoked ham, picnics, slab bacon, 2 months; soups and stews, 1 month.

Sliced bacon should not be frozen, it was noted. Cured and smoked meats deteriorate rapidly when frozen. Larger cuts, such as hams, should be stored in freezers only for very short periods.

WORTHINGTON DEALERS ARE SUCCESSFUL DEALERS!



# "Signing up with Worthington was a good move"

... says Richard H. Catlett, President of the Catlett-Johnson Corporation, Virginia's leading air conditioning and refrigeration dealers. Mr. Catlett goes on: "In the eight years we've had the Worthington franchise, our dollar volume has more than doubled. Previously, we were identified with another nationally advertised brand. The decision to change was not easy, but the results have been very gratifying. We've expanded our business as a result of Worthington's unrestricted franchise and complete range of products. And Worthington is one outfit that never competes with its dealers."



**RALPH E. ORCUTT, CATLETT-JOHNSON'S SALES MANAGER SAYS:** "Worthington promotion material is second to none — it helps us do a bang-up job. I'm enthusiastic about the way the Worthington people — and the sales aids they create — help us locate prospects ... and turn them into sales. Worthington's staff of merchandising experts have given us a big hand in the development of a sound dealer program. And Worthington's national reputation helps a lot."



**JOHN C. HILDEBRAND, JR., VICE PRESIDENT & CHIEF ENGINEER, SAYS:** "The fact that I can rely on Worthington's published engineering data and ratings saves me many hours of engineering time. And Worthington's complete line of equipment allows me to select the units I know will be best for the job. Reciprocating and central station systems, year-round residential units, packaged air conditioners, add-ons — Worthington's got everything!"



**J. TABB MEYER, JR., OPERATIONS MANAGER, SAYS:** "Worthington units are extremely compact, well-designed, and easy to install almost anywhere. You can see the equipment is built with the serviceman in mind — easy accessibility cuts down our maintenance and service time. And Worthington's million-dollar compressor just can't be beat for day-in, day-out reliability. On the off-chance that something may go wrong, Worthington's five-year warranty takes care of it."

Catlett-Johnson's story — like so many others we've received — adds up to this: Worthington dealers are successful dealers. And there are plenty more reasons why. Lots of them are mentioned in Worthington's new monthly publication, "The Merchandiser". Write for it today. Worthington Corporation, Air Conditioning and Refrigeration Division, Section A.5.37-AC, Harrison, N.J.

A.5.37

# WORTHINGTON



THE BEST FRANCHISE . . . THE MOST COMPLETE LINE

For more information about products advertised on this page use Information Center, page 30.



## Furniture Firm Chooses Unit System Because:

1. Floor Traffic Varies Load Requirements
2. Future Expansion Means More Remodeling
3. Multiple Units Offer Extreme Flexibility

LINCOLN, Neb. — Unit control air conditioning has been chosen over a central system in the current remodeling at Hardy Furniture Co., where the five-story-and-basement building has 63,000 sq. ft. of space to be air conditioned.

M. G. Lehman, Carrier distributor, was making the installation.

The problem of what type of air conditioning system to use was studied for several months before unit control was chosen. Lehman engineers and the fur-

niture store management finally agreed that unit control would be best suited to the job because of its greater versatility.

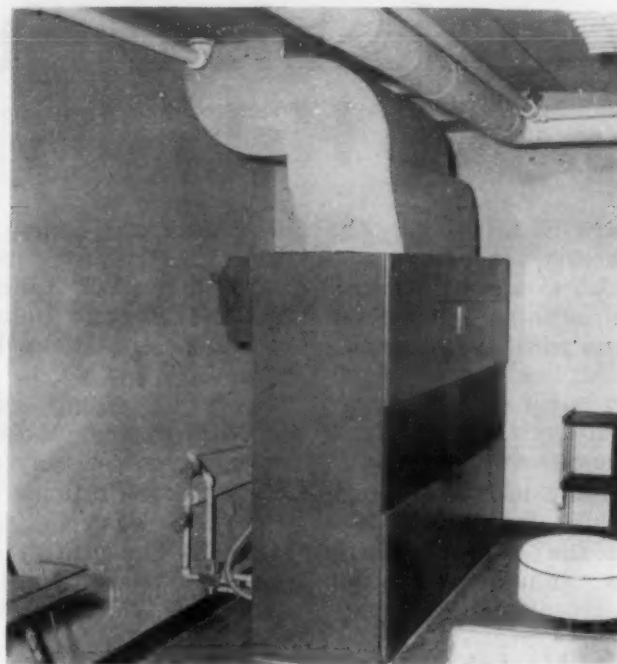
Further influencing the decision was the tentative plan of President Philip S. Hardy to undertake more remodeling in another five to 10 years. Sheet metal work for a central system probably would have to be torn out in that event.

The job entails installation of 12 Carrier self-contained air conditioning units, varying from five to 10 hp.

Units selected for the job: a 50K8 for the basement; a 50K12, 50K8, and 50K6 for the street floor; two 50K6's for the second floor; two 50K6's for the third floor; a 50K6 and a 50K8 for the fourth floor; a 50K8 and a 50K12 for the fifth floor. Horsepower ratings on these are 5 for the K6, 7.5 for K8, and 10 for K12.

### Units Can Be Relocated

Lehman noted that the self-contained units can be relocated as required. They also fit in with



INSTALLED IN a corner of kitchen furniture sales department is this 10-hp. self-contained air conditioner. This is one of three installed in the basement of Hardy Furniture Co., Lincoln, Neb.

**OLD SOL**  
+  
**SERVEL SUPERMETIC**  
= **Super Summer Profits!**

### WHATEVER THE

**APPLICATION . . .** whether a new or replacement installation — here's how to make your big hot-weather business bigger and better than ever:

### **CASH IN** ON THE ADDED SALESPower OF "POWERED BY SERVEL"

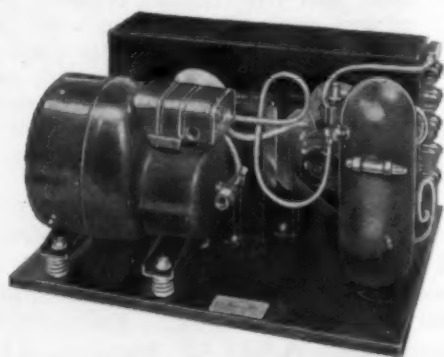
Cash in on the unequalled quality for which SERVEL SUPERMETICS® are famous; the extra compactness and quiet operation . . . the plus protection of Servel's unique built-in lubrication. Cash in on the quicker, easier, more profitable installations made possible by SUPERMETIC simplified design. Cash in on the extra-ready availability of SUPERMETICS and all installation supplies from more than 100 conveniently located Servel Authorized Wholesalers — AND on Servel's low-cost Factory Warranty available with all current models!

Servel hermetic condensing units for expansion valve or capillary tube type systems, and hermetic power units are available in all popular sizes from 1/4 through 7 1/2 H. P. Write today for complete set of Supermetic model specifications.

### **SERVEL, INC.**

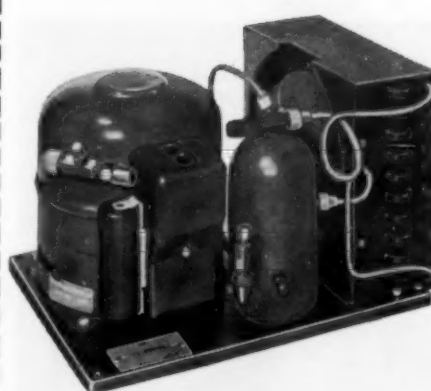
Commercial Refrigeration Division  
Evansville 20, Indiana

**Servel**



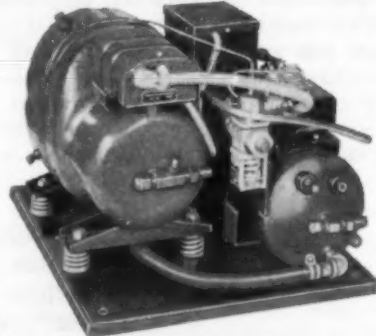
**3/4-HP SERVEL SUPERMETICS**

Sturdily constructed, compactly designed for a multitude of uses such as small walk-ins, large display cases, reach-ins, and dairy coolers.



**1/2-HP SERVEL SUPERMETICS**

Widely used in self-contained fixtures, beverage coolers, water coolers, ice-cream cabinets, home freezers, display cases, and reach-in refrigerators.



**1-HP SERVEL SUPERMETICS**

This hermetic unit will fill the needs of a very large majority of retail dairies, water-cooling systems and walk-in coolers in food establishments. Its water-cooled design makes it particularly suited to warm locations.

THE NAME TO WATCH FOR GREAT ADVANCES  
IN REFRIGERATION AND AIR CONDITIONING

the needs of the furniture store which has considerable more traffic on some floors than on others. Thus the thermostats can be set to use less electricity on low-traffic floors at a cost savings.

Each unit has independent thermostatic control. Ductwork has been installed as required to do an efficient job, but this work has been held to a minimum in cost. This was due to probable future remodeling demands when the sheet metal work would have to be taken out. Double deflector grilles have been installed.

Since the street floor is the "showcase" of the store, placement of air conditioning units on that floor was avoided as much as possible. Two of the three units serving the floor are located in the basement. These include a 10 and a 7.5-hp. unit.

A 5-hp. unit has been located at the rear of the east side of street floor with ductwork reaching nearly the length of the floor to serve an area about 25 by 140 ft. Basement units serve the remainder of the 100 by 140-ft. floor including credit offices and a balcony selling area.

### **Ducts Run Close to Ceiling**

Special care was taken in placing the street-floor sheet metal work so as not to mar appearances. The ducts run close to the ceiling and along with the ceiling have been painted a dark brown so as to be unobtrusive. Fluorescent lighting grilles have been suspended on metal hangers below the level of the ductwork to further de-emphasize the sheet metal installation.

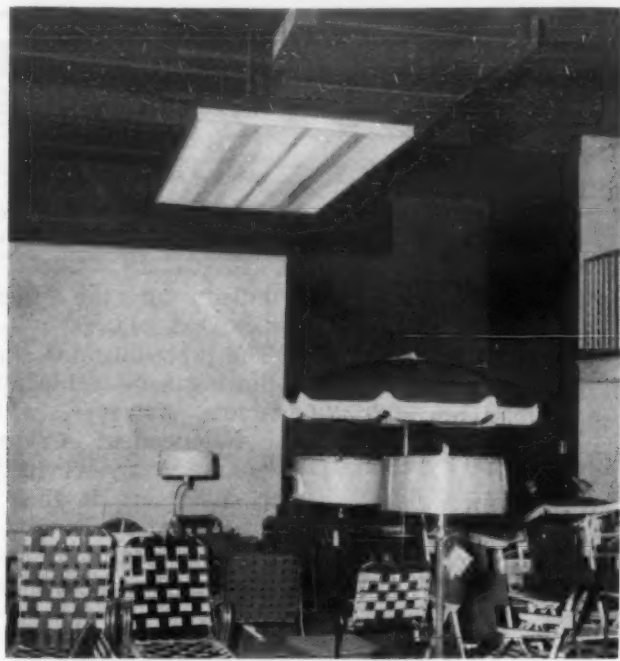
A 7.5-hp. unit handles the entire basement cooling load. This floor is normally much cooler than other floors of the building so that the single unit, with about 75 ft. of ductwork, does a good job of cooling the area.

### **Two 5-Hp. Units Handle Light Traffic Load**

The second floor which houses bedding, and the third floor, with furniture, have the least amount of traffic. Thus two 5-hp. units on each floor handle the cooling load satisfactorily.

The fourth floor, with living  
(Concluded on next page)





DUCTWORK from the 10-hp. unit installed in the basement brings cooled air to the main floor. Dark brown paint and suspended fluorescent fixtures help disguise sheet metal work.

## Why Unit System?

(Concluded from preceding page)

room furniture, executive offices, model rooms, and the interior decorating department, needed a little more air conditioning capacity. This was met by installing a 7.5-hp. unit along with a 5-hp. unit.

Heaviest load is on fifth floor, which is at the top of the building. Hardy pointed out that summer sales on this floor have suffered in past years.

A new solid front which eliminates the former windows will prove a big aid in air conditioning the fifth floor as well as other areas, Lehman explained.

A 10-hp. and a 7.5-hp. unit have been installed on this floor, which carries floor coverings and has the relocated advertising and display offices. The 10-hp. unit vents upon the main sales area with a minimum of ductwork. Ductwork extends from the 7.5-hp. unit to serve the offices at the rear of the floor.

Hardy's is Lincoln's oldest retail business house, having been established by the late H. W. Harvey in 1871, and is one of the largest furniture stores in the midwest. The present building was occupied in 1912.

## Mahoning County Gets First Cooled Courtroom

YOUNGSTOWN, Ohio—County commissioners recently voted to accept a bid of \$3,298 by Buckeye Heating Co. to install air conditioning equipment which will serve the courtroom of Common Pleas Judge Harold B. Doyle. This will be Mahoning county's first air conditioned courtroom.

At the same time, the commissioners accepted a bid of \$1,962 to deaden the sound in the courtroom. This work will be completed by Pittsburgh Plate Glass Co.

Plans and specifications for the air conditioning and sound deadening were drawn up by Arsene Rousseau, who has done much of the county commissioners' architectural work.

The commissioners expect to receive requests from the other common pleas judges for similar installations if Judge Doyle's project is a success.

## Air Conditioning Is Listed 'Most Wanted' Item In Nebraska Hospital Modernization Program

OMAHA, Neb.—Air conditioning is listed as the number one improvement in the current modernization project at the nine-story Bishop Clarkson Memorial hospital here, as a result of a survey made by the board of trustees.

The new \$4,000,000 structure will be opened to the public in September.

Patients, physicians, and nurses all were questioned as to what they considered most important in a hospital. Then administrators, doctors, and other hospital personnel in other cities were asked:

"What do you like best? And what did you leave out that you would like very much to have?"

The answer most frequently given was "complete air condi-

tioning," while "a pneumatic tube system" also ranked high. The new Clarkson hospital will have both.

The new hospital will have room for 400 patients plus 32 new-born babies, and every room will be air conditioned.

The air conditioning will feature individual temperature controls in each patient's room. All incoming air will pass through electro-static filters and old air will never be recooled. Only fresh air will be drawn in.

Special humidity conditions will be provided in the operating and delivery rooms and nursery. The kitchens and store-room will not be air conditioned but will be ventilated. Ample refrigerated storage will be provided in the kitchens and store-

room as well as in the biological research rooms.

There will be a temperature scanning chart in the chief engineer's office so he can spot check at a glance temperatures in key areas.

Since the hospital faces south, concrete sun visors or "eyebrows" will keep out the sun, reduce glare, and lighten the refrigeration load. Window washers can walk on the eyebrows.

There will be an air conditioned 180-person dining room for hospital personnel. Likewise air conditioned will be a lobby lounge for 20 persons, loungers to handle 160 persons in the upper floors, a chapel capable of handling 60 persons, and a 60-person snack bar for visitors.

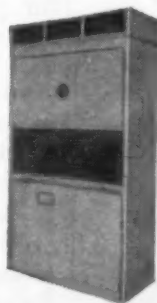
Ice for ice water will be made on the spot by two ice-cube makers on each floor, a total of 18 machines. Each machine will have a capacity of 200 lbs. per day.



there is no  
substitute  
for  
experience!



Packaged Waterless (Air-Cooled) Air Conditioners—no water needed, no plumbing required. 2, 3, 5 and 7½ H.P.



Packaged Water-Cooled Air Conditioners in 6 models, from 2 to 15 H.P.

### with AIRTEMP you get 18 years' experience in "Packaged" Air Conditioning!

You'll profit from an Airtemp franchise because:

**Profits are higher**—when you sell the leader! More Airtemp units have been installed and are now in use than any other make.

**Profits are higher**—when you represent a specialist! Airtemp has only one interest—air conditioning—and gives you concrete, practical guidance in local sales, advertising and promotion.

**Profits are higher**—when you handle a complete line! Airtemp offers a full range of ten models—both water-cooled and waterless units, from 2 to 15 H.P.

**Profits are higher**—when you're backed by advertising! Airtemp runs specific benefit advertising aimed directly at the businesses who need air conditioning most.

For full details on the many selling advantages you enjoy with an Airtemp Packaged Cooling Franchise, write to: Airtemp Division, Chrysler Corporation, Dayton 1, Ohio.

**Airtemp**  
DIVISION OF CHRYSLER

"The Line That Pays"



AIR CONDITIONING AND HEATING FOR HOMES, BUSINESS AND INDUSTRY



# Servicing Automobile Air Conditioners

BY C. DALE MERICLE

Servicemen interested in additional sources of income would do well to consider the booming industry of automobile air conditioning. To aid them in tapping this new field, AIR CONDITIONING & REFRIGERATION NEWS is publishing this new series of service articles.

This is the second and concluding instalment of the discussion of products of Frigikar Corp. Previous instalments were devoted to A.R.A. Mfg. Co.

In the course of this series many different makes will be described, including those of "independent" firms and those offered by automobile manufacturers themselves as factory-installed accessories.

## Frigikar (2)

Frigikar Corp.  
1602 Cochran St.  
Dallas, Texas

Frigikar control panel introduced on 1955 models is shown in Fig. 8. In addition to the two fan control switches, the 1955 panel has two toggle switches and a red pilot light.

Left-hand control is the "Air Conditioner" switch. This is the basic control by which the car owner turns the conditioner on or off. In the "off" position, the switch energizes the solenoid by-pass valve continuously, bypassing the condenser and evaporator and thus providing no air conditioning.

When the "Air Conditioner" switch is in the "on" position, it breaks the circuit to the solenoid by-pass, permitting the system to function normally.

Right-hand control on 1955 control panel gives the driver a choice of "constant cooling" or "automatic temperature control." (This control is operative only when left-hand "Air Conditioner" switch is in "on" position).

When turned to "Automatic Temperature Control" position, this switch lets the thermostat control the by-pass solenoid operation, cutting the unit in and out as needed.

When turned to "Constant Cooling" position, the switch breaks the circuit to the solenoid, thus permitting constant

refrigeration. Refrigeration will continue (as long as the car is running, of course) until this switch is flipped to "Automatic Temperature Control" position or left-hand "Air Conditioner" switch is turned to "off" position.

Red pilot light of control

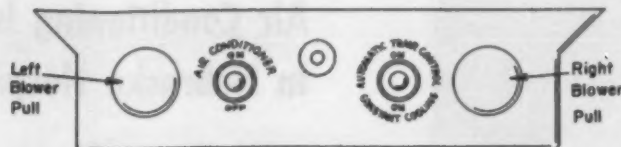


FIG. 8 is control panel used with 1955 Frigikar units.

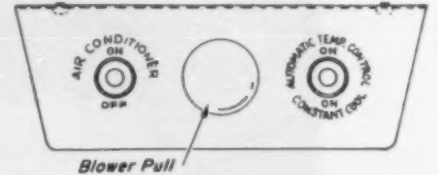


FIG. 10 shows control panel for Frigiking and Frigikab (1955) systems.

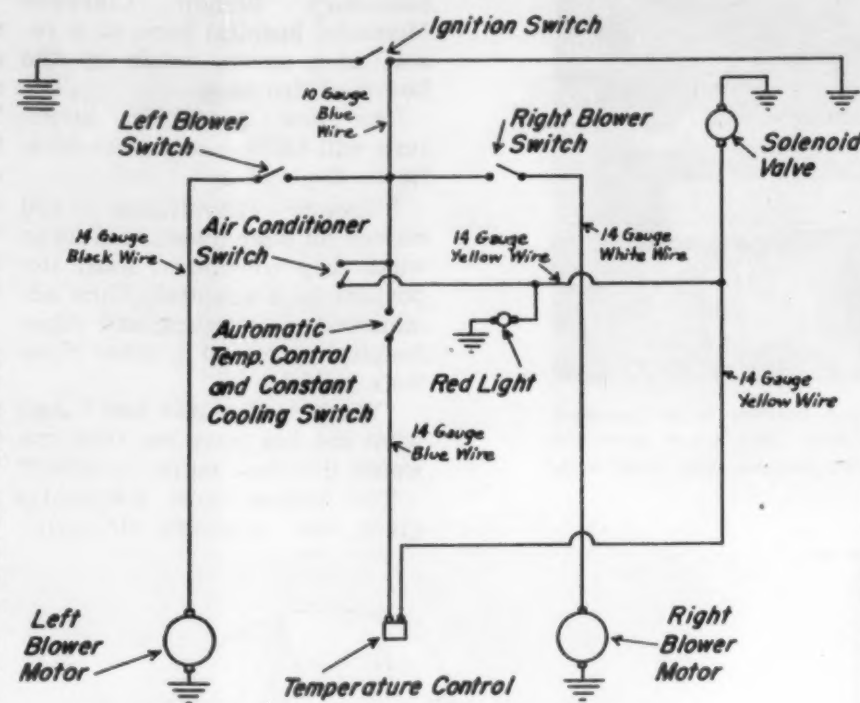


FIG. 9 is wiring diagram for 1955 Frigikar systems.

handled by the factory or authorized dealers.

The preceding description and following service hints on these systems, however, will enable the independent serviceman to give emergency service to Frigikar customers if that becomes necessary at a time and/or place when the customer cannot get to an authorized service station.

## Evacuating System

1. Remove caps from compressor suction service and discharge valves.
2. Remove both service plugs from compressor.
3. Attach hose from compound gauge of charging and testing gauge unit to service port on 5/8-in. suction valve.
4. Attach hose from high pressure gauge of charging and testing unit to service port of 1/2-in. discharge valve.

5. Adjust valves as shown in Fig. 12.

6. Start engine and run at low speed until compound gauge reads 25 to 28 in. vacuum.

If oil is discharged through the charging line along with air during this operation, stop the engine for a few minutes. Then start up again and proceed until the proper vacuum is reached. Vacuum should be pulled approximately 30 minutes, depending on climatic conditions. The more humid the climate, the longer should the vacuum be maintained.

7. When the system has been pumped down to 25 to 28 in. vacuum, close discharge valve on testing manifold and stop the engine. If the vacuum holds for several minutes, this is an indication that any leak in the system is comparatively small, and it will be safe to charge the system with enough "Freon" to test for leaks.

If the vacuum does not hold when the engine is stopped, there must be a bad leak in the system. To find the leak, attach the "Freon" drum to the end of the charging line and open the valve in the drum, allowing "Freon" to enter the lines until both gauges register 60 to 70 p.s.i.g.

Now check the entire system for leaks, using a halide leak detector.

After leak has been repaired, the system must be pumped down again.

## Charging the Unit

1. Adjust suction service valve as shown in Fig. 13.
2. Back-seat the discharge valve counter-clockwise as far as possible.
3. Connect charging line from drum to manifold, being sure to blow out all air from testing line before letting refrigerant enter the manifold.
4. Start car engine and set on high idle.

5. Open refrigerant drum and charge until liquid of milky white refrigerant comes from the receiver check valve under (Continued on next page)

panel burns only when "Air Conditioner" switch is off or when thermostat has turned unit off. In other words, the red pilot light burns when the solenoid is energized.

Wiring diagram for the 1955 Frigikar hookup is shown in Fig. 9.

Control panel for 1955 Frigiking and Frigikab units is shown in Fig. 10. Essentially it is quite similar to the 1955 Frigikar control panel.

It has only one blower switch and lacks the red pilot light. However, it does have the "Air Conditioner" switch on the left side and the right-hand switch provides the two positions of "constant cooling" or "automatic temperature control."

Function of these two switches is the same as outlined for the 1955 Frigikar control system.

Wiring diagram for the 1955 Frigiking and Frigikab control system is shown in Fig. 11.

## Other Components

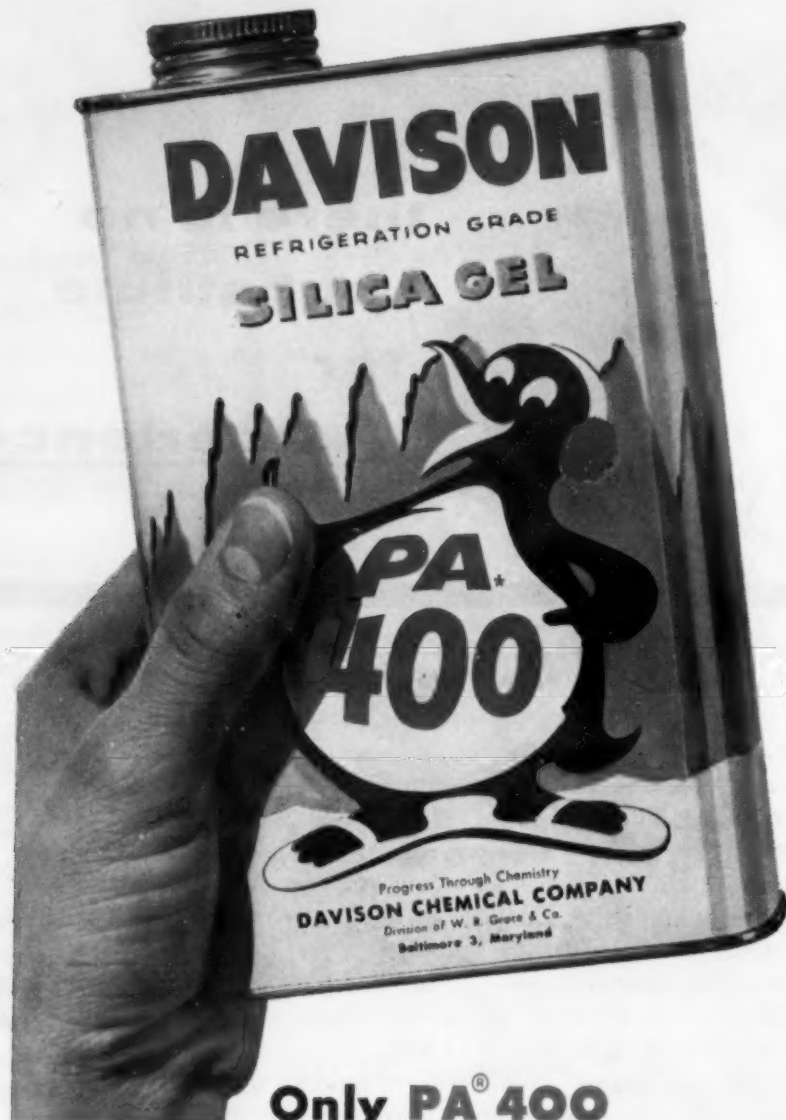
Short lengths of flexible vibration absorbers are provided in the suction and hot gas lines close to the compressor. Purpose is to prevent breaking of lines due to vibration of the compressor mounted on the car engine block.

Aluminum tubing covered at some points with rubber hose for protection is used in Frigikar systems. Suction line is 5/8-in. o.d. Discharge line and liquid line to receiver are 1/2-in. o.d. A 3/8-in. o.d. line runs from receiver tank to evaporator assembly.

Plastic discharge air ducts are available as optional extras. Mounting on the parcel shelf, these transparent outlets direct the conditioned air forward over the heads of car passengers.

## SERVICE HINTS

Editor's note: No attempt is being made in this series to describe or discuss methods of installation of Frigikar or Frigikab systems since this is



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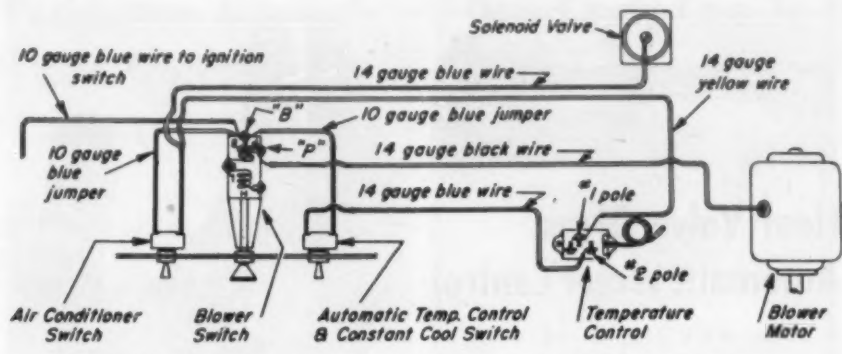


FIG. 11 is the wiring diagram of Frigiking and Frigikab (1955) systems.

## ving Auto Air Conditioners--

(Continued from preceding page) liquid comes out, some refrigerant has been lost. Complete charge in Frigikar units is 4½ lbs. (3 lbs. in Frigiking and Frigikab) and should be weighed as refrigerant enters the system.

In summer months it helps speed up the operation and also keeps the car engine cool if a fan is placed in front of the condenser while charging the unit.

The receiver liquid level should be checked again after the unit has been in operation for a short period of time.

6. Back-seat suction valve and discharge valve, and disconnect charging-testing manifold from refrigerant drum and gauge ports.

7. Replace service plugs and caps.

8. After thoroughly checking and road testing, unit is now ready for operation.

### Oil Charge

On systems employing the Lehigh 4-cylinder compressor, the compressor should be checked to see that the oil level is correct at time of installation because too much oil will cause inefficient cooling.

Oil level can be checked by removing oil check hole plug in compressor and inserting a small rod or soda straw. With the straw touching the bottom of the compressor, the oil level should not be over 1⅞ in. After unit has been in operation for 500 miles, oil should be at minimum level of 1⅞ in.

### Trouble Chart

The following suggestions about possible troubles and their correction are offered by Frigikar:

**TROUBLE:** Insufficient air circulation.

**Check:** Not enough air from blower. Blower running too slow. Loose or corroded connections. Switch broken. Battery charge low.

**Correction:** Trace circuits for bad connections. Check switch and replace if necessary. Check battery and recharge if low. Replace blower motor.

**TROUBLE:** Air from evaporator not cold.

**Check:** Compressor not running or running slowly. Belt broken or loose and slipping.

**Correction:** Tighten idler pulley or compressor adjustment and be sure to align pulleys properly. A properly installed belt will depress ¾ in. for 1 ft. of span between pulleys. Replace belt if necessary.

**TROUBLE:** Loss of refrigerant.

**Check:** Open liquid tester on receiver. If gas rather than

liquid comes out, some refrigerant has been lost.

**Correction:** Test entire system thoroughly for leaks. Repair leaks and then add refrigerant.

**TROUBLE:** High discharge pressure. Normal head pressure is 180 p.s.i.g. in 100° F. ambient.

**Check:** Condenser stopped with dirt, bugs, or lint. Discharge line from compressor extra hot. Air or moisture in system.

**Correction:** Clean condenser thoroughly with hose. Replace

drier. Pump down and recharge.

**TROUBLE:** Low suction pressure.

**Check:** Expansion valve strainer stopped up with foreign matter. Suction line out of evaporator coil feels warm. Suction line damaged or bent.

**Correction:** Remove and wash expansion valve strainer in clean naphtha. Replace damaged lines.

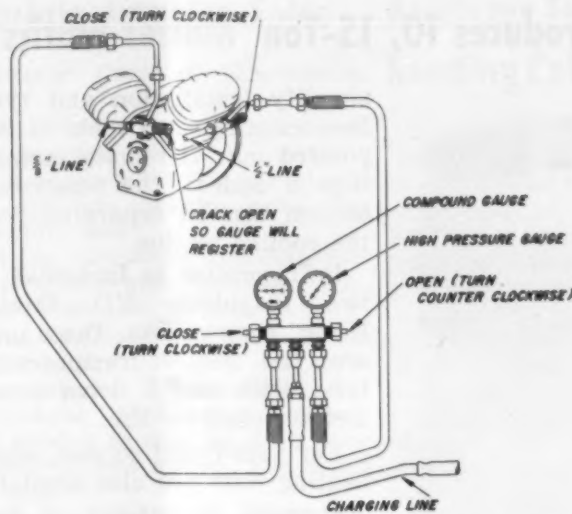


FIG. 12 shows setup recommended by Frigikar for evacuating system.

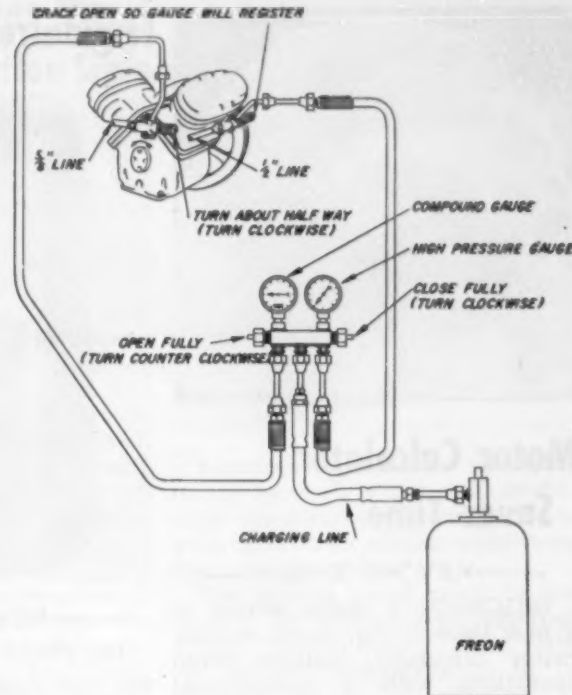


FIG. 13 diagrams Frigikar charging operation.

**TROUBLE:** Moisture in expansion valve.

**Check:** Insufficient cooling capacity.

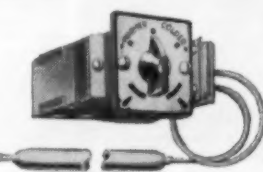
**Correction:** Replace drier and recharge.

**TROUBLE:** Insufficient cooling.

**Check:** Feeler bulb of expansion valve. It may be loose.

**Correction:** Tighten feeler bulb clamp.

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## Ranco Controls

to reverse air conditioners from hot to cold

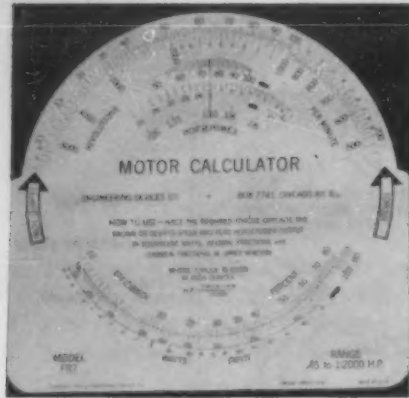
You don't need a battery of controls to coax warm air out of an air conditioner. There's a single two-in-one Ranco Control for the job. Installation of a Ranco Control on air conditioners equipped for heating or cooling trims service time, cuts down on callbacks and hikes your profit figure accordingly. Get the right control the first time. See your Ranco wholesaler. Install Ranco... to be sure.



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## What's New



### Motor Calculator Saves Time

—KEY NO. E-720—

CHICAGO—A single setting of a new time-saving, direct-reading motor calculator replaces seven operations with a conventional slide rule, according to Engineering Devices Co. here.

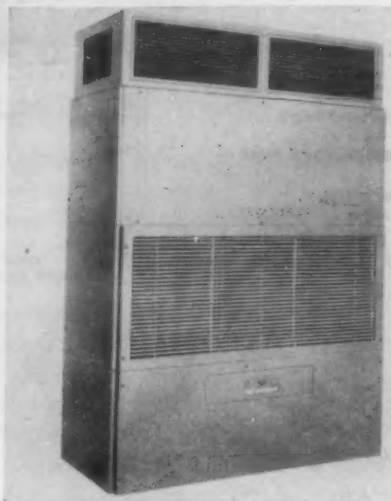
The company said a single setting for any relationship of speed vs. torque gives equivalent watts output and horsepower in decimal and common fractions, also the percent efficiency for any value of watts input.

"Unlike a conventional slide rule, the motor calculator circular slide rule makes it possible to visualize the relationships between values and where alternative operating values are possible the best engineering compromise can be selected by inspection, thereby saving considerable time," it was stated.

Model FR7 of the calculator covers a horsepower range from 1/2000 to 1/2 hp. Other horsepower range models are said to be available.

The device is printed on vinylite in 6 1/2 in. width with 7-in. length cycles for torque and speed, according to Engineering Devices.

### Frigidaire Introduces 10, 15-Ton 'Master-matics'



—KEY NO. E-721—

DAYTON—Ten and 15-ton self-contained air conditioners, designed for commercial, industrial, and institutional establishments of all kinds, have been added to the "Master-matic" air conditioning line of Frigidaire Div. of General Motors Corp.

Each model features a twin cooling system, which provides versatile control of the temperature and humidity by the user, according to Frigidaire.

"One of the systems can be operated during warm weather, but both systems will operate automatically during periods of extreme heat and humidity," the company said. "This twin-cooling feature eliminates both under-cooling and over-cooling, thus reducing operating costs."

The blower section, located at the top of the cabinet, can be adjusted so that the conditioned air may be discharged to the front, back, or top. This helps

simplify installation and tying into existing ductwork, it was pointed out. If remote installation is desired, the compressor section can be separated from the cooling section.

Refrigeration is furnished by two Frigidaire XD "Meter-Miser" compressors. These units are the sealed reciprocating type, with direct drive design and are oiled for life.

For year-round service, steam heating coils are also available.

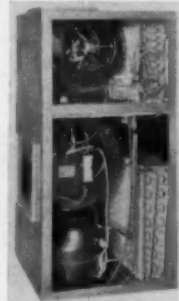
Over-all dimensions of both models including accessory hood: 93 3/4 in. high, 67 in. wide, 29 1/2 in. deep.

Frigidaire also manufactures 2, 3, 5, and 7 1/2-ton models for a variety of commercial applications.

### Lingle Packaged Home Units Use No Water

—KEY NO. E-722—

KANSAS CITY, Mo.—Lingle Refrigerator Co., manufacturer of commercial and industrial refrigeration equipment, has announced that it is now producing packaged single-unit 2, 3, and 5-ton complete home waterless air conditioners.

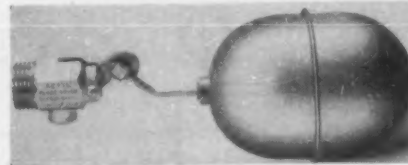


Made for "every conceivable type of installation," these units are available in upright, split, and horizontal models, the company said. They are equipped with Tecumseh compressors, Delco motors, Viking fans, and General controls.

The new units are completely hermetically sealed and designed for high capacity, according to the company.

"The 3-ton Lingle 'Cleo-Matic,' for instance, will cool up to 1,800 ft. and will deliver full 3-ton capacity at an outside temperature of 110°," the manufacturer claims.

"Simple installation utilizes present ductwork for air distribution, plus one hot air exhaust duct."



### Float Valve Gives Automatic Water Control

—KEY NO. E-723—

OAKLAND, Calif.—Development of an automatic control for water intake on air conditioning units and humidifiers has been announced by the Reitman Mfg. Co. here.

The new control, known as the Reito "Jiffy Action" valve automatically shuts off the water supply once a pre-selected water level has been reached. Selection of water level is made by light finger pressure on a spring tension stud, permitting proper positioning of the float arm.

The Jiffy Action valve is available in two models. Model #202 is equipped with standard 1/2-in. thread for connection to water pipes.

Model #303 is a 3-way valve with combination pipe and hose connection, allowing it to be connected to 1/4-in. or 1/2-in. pipe, or to ordinary garden hose when used as a water supply system for smaller home-size air conditioners or humidifiers.

All parts are of brass and stainless steel, requiring no maintenance after installation.



### Control Series Offers Small Size, Lightness

—KEY NO. E-724—

ATTLEBORO, Mass.—The Spencer Thermostat Div. of Metals & Controls Corp. here has introduced a new disc-type snap-acting hermetically sealed controls (C-4344 series).

The small size makes this series particularly suitable for applications where spaces and weight are limited.

The snap-acting Spencer disc is located opposite the terminal end at the bottom of the metal enclosure where temperature of air liquids or mounting surface can be followed clearly.

C-4344 series controls are hermetically sealed from contamination and to withstand salt spray and vibration, etc., as required by government specifications.

They are available in pre-set temperature settings.



"Complete line, the perfect set-up for every need," says Clyde L. Copp (left), Typhoon dealer in Tulsa, shown with one of his customers.

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## TEMPERATURE RECORDERS



## Pushbutton Automatic Fans Are Portable

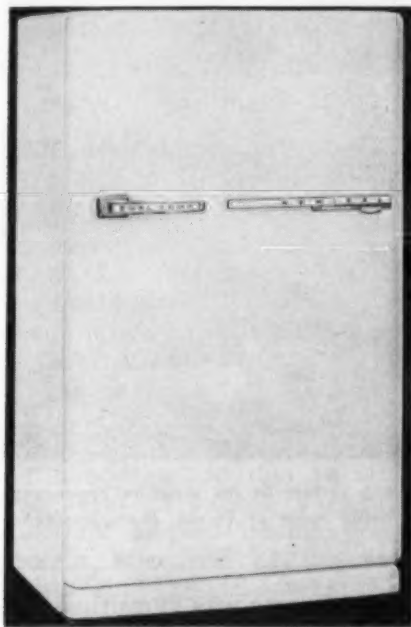
—KEY NO. E-725—

CHICAGO—Three pushbutton automatic 20-in. fans which have chromed steel handles so they can be removed easily from their original mountings and carried about the home have been introduced by Fresh'nd-Aire Co.

Included in the group are the manually reversible window fan model F-20, floor circulator model F20FM, in addition to the portable hi-low circulator model F20MS.

With a housing base that's 5 in. in width, these Fresh'nd-Aire fans can be placed on the floor or on tables about the home and used as air circulators.

Fans retail from \$59.95, the manufacturer states.



## Admiral Adds 3 Special Refrigerators to Line

—KEY NO. E-726—

CHICAGO—Admiral Corp. recently announced the addition of three special refrigerators to its 1956 line.

The refrigerators are styled with new square tops, have glacier tone porcelain enamel interiors and chrome trim.

Two of the new models are "Dual-Temp" refrigerator-freezers. DT1381S, a 12.4-cu. ft. two-door combination, has a freezer chest with 81-lb. capacity, a high-speed freezing shelf formed by refrigerated coils, and a bottom freezing surface. It has three glide-out shelves, two door shelves, and a third shelf in the freezer compartment door. Carrying a regular price of \$519.95, it will be promoted at \$399.95 to enable dealers to make profitable trade-ins.

The 10.3-cu. ft. Dual-Temp also has a separately insulated freezer chest. Model 1070S has one glide-out shelf, three door shelves plus a built-in egg rack, and two porcelain crispers. Carrying a regular price of \$369.95, it will be promoted at \$299.95, according to Admiral.

The third summer promotional model is D958S, a 9.2-cu. ft. refrigerator with three door shelves, full-width crisper, butter keeper, and a frozen food capacity of 59 lbs.

It carries a suggested list price of \$199.95.

## 3-Deck Candy Case To Stimulate Impulse Sales



—KEY NO. E-727—

MT. VERNON, N. Y.—A three-deck refrigerated candy case that protects chocolates and candies against melting and spoilage during the hot summer months is being manufactured by Brewer-

Titchener Corp. of Binghamton, N. Y.

This complete candy department merchandiser features complete front accessibility and is designed to stimulate impulse sales, the company said.

It is nationally merchandised by C. Q. Sherman Associates, Inc., Mt. Vernon, N. Y.

The streamlined case, model C-366, in the BTC gold and white hammertone styling with full fluorescent illumination, "offers full display in only 66 in. of floor space," it was stated. The depth is 30 in.

Other features are: gravity coil type refrigeration, two-thickness fog-free glass front, mirrored backing on eye-level dry shelf, rustproof interior lining and floor racks, and a five-year condensing unit warranty. Stainless steel window trim and white louvered panel is optional, according to the manufacturer.

## Analyzer Features Direct Reading Calibration Scale

—KEY NO. E-728—

SOUTH PLAINFIELD, N. J.—Cornell-Dubilier Electric Corp. has announced its new deluxe model BF-70 capacitance-resistance analyzer for service shop and industrial testing purposes.

This 10-lb. portable instrument measures important characteristics of most capacitors as well as resistors.

Its features include a direct-reading calibration scale which provides simplified measurements, avoiding possible errors in using multipliers or charts, according to the company.

The BF-70 locates capacitor opens, shorts, and intermittents; high and low capacities; also detects high leakage and high power factor in electrolytic capacitors, as well as low insulation resistance in paper, mica, and ceramic dielectric capacitors.



Sensitive capacitance measurements between wires and shieldings; transformer windings, cable wire, and other similar conditions are also possible.

The built-in panel meter is arranged for independent external voltage measurements to 750 volts and current measurements to 75 milliamperes.

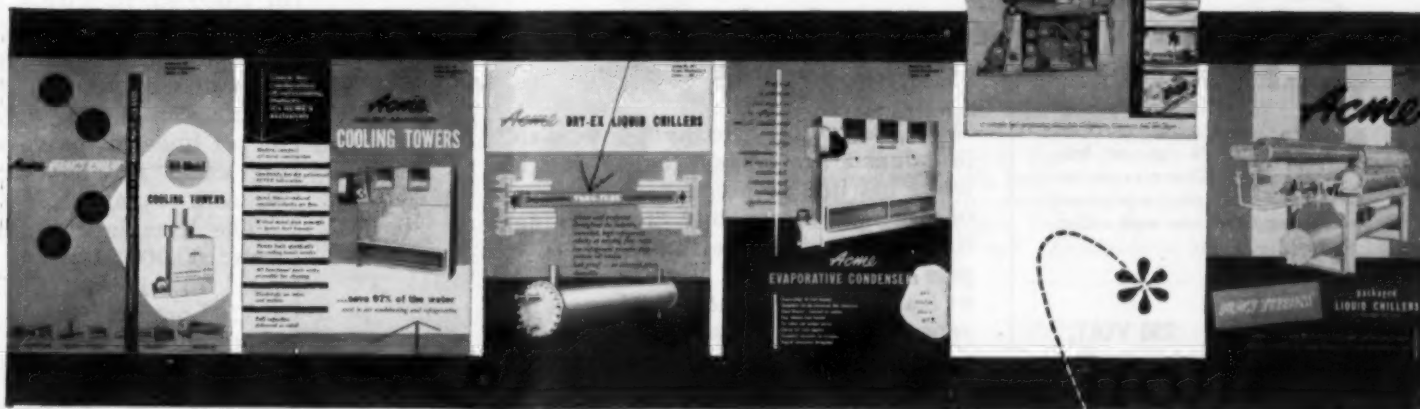
Analyzer is reported to retail for \$71.50.

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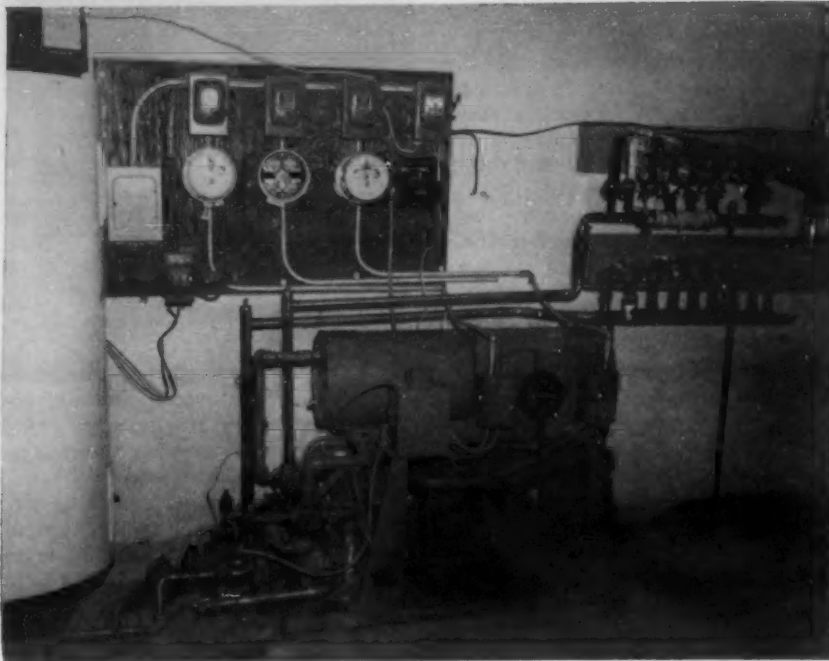
Evaporative Condensers	Shell-and-Tube, Shell-and-Coil Condensers	Heat Exchangers
Cooling Towers — 2 to 70 tons	Flow-Cold packaged Liquid Chillers to 15 tons	Liquid Receivers
Blo-Cold Unit Coolers	Flow-Therm packaged Liquid Chillers to 220 tons	Flow-Temp Heat Pumps
Dry-Ex (direct expansion) Liquid Chillers		Remote Room Conditioners
		Oil Separators

- ☐ Acme Flow-Cold Cooling Towers, 2 to 15 tons
- ☐ Acme Cooling Towers, 15 to 70 tons
- ☐ Acme Dry-Ex (Direct Expansion) Liquid Chillers
- ☐ Acme Evaporative Condensers
- ☐ Acme Flow-Cold Packaged Liquid Chillers, 2 to 15 tons
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# Water-to-Water Heat Pumps Found Practical In All U. S. Climates



INSTRUMENTS provided for 3-hp. Acme heat pump in garage of Michigan home permitted accurate study of operating costs.

## Millsom Describes 2 Home Installations To Illustrate His Point

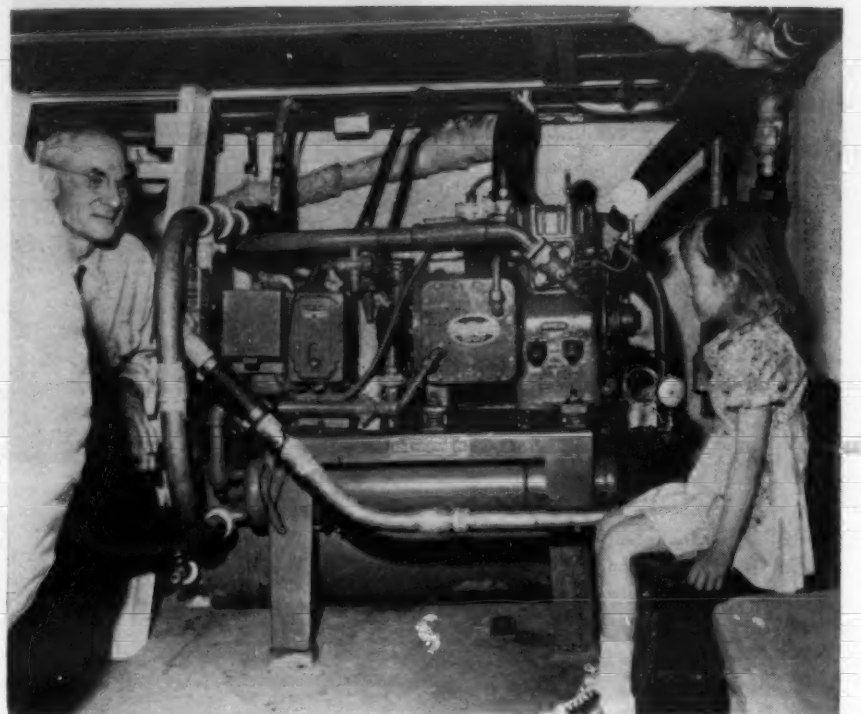
**Editor's Note:** This is the first portion of a speech in which C. W. Millsom, vice president in charge of sales and advertising for Acme Industries, Inc., describes three application phases of water-to-water heat pumps. The NEWS will publish the speech in three instalments.

CHICAGO — Water-to-water heat pumps are practical in all climates in this country for year-round air conditioning, believes C. W. Millsom, vice president in charge of sales and advertising for Acme Industries, Inc.

In a talk before the American Power Conference at its 17th annual meeting here, Millsom cited facts and figures on residential heat pump jobs in Wisconsin and Michigan homes plus an analysis of heat pumps in Florida schools to prove his point.

He also touched upon the question of water treatment in heat pump systems.

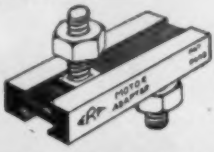
"In the past a great many people have been under the impression that the heat pump



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This great addition to the "Serviceman" line does a vital job supremely well. Its white hairline pointer shows total time of test; red pointer shows total running time. It is easier to read, use, and interpret than a recorder . . . has no charts or leaky pens to bother with . . . yet it is very moderately priced.

Two models (opposite) cover all conditions. Note sturdy case finished in attractive hammerloay gray with sharp white numerals on black dial . . . also suction-cup feet for firm placement without damage to finish. This is the instrument you've been waiting for. Write for details, or

See your Wholesaler

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For testing smaller units with compressors of 1/4 hp. or less. Operates in series . . . Simply plug equipment into timer; timer into wall outlet.

### 230 VOLT, 60 CYCLE MODEL



For testing larger installations regardless of horsepower. Operates in parallel. Note well shielded alligator clips for attaching to motor terminals and power lines.

was making great strides but would be used almost entirely in the south," Millsom said.

### Wisconsin Residence

"I am going to cite two examples of residential installations; first an installation made in an existing home in Wisconsin with a -20° to 75° design condition where a forced air heating system is used."

This home, located in Waukegan, Wis., and owned by Clydewell Burdick, has an area of 1,600 sq. ft. with a volume of 13,000 cu. ft. heated with a 5-hp. water-to-water heat pump. Control was set at 75° day and night. Sub-meters were placed on all lines to arrive at operating costs for the heat pump, Millsom explained.

The heat loss figured as follows: 60,000 B.t.u. at -20° outside, 75° inside; 53,333 B.t.u. at -10° outside, and 46,667 B.t.u. at 0° outside.

"One very important point to remember in this installation is the fact that a water storage tank was installed which helped in both the operating cost of the system and the comfort of the family," Millsom declared. "This allowed lower water temperatures and with a two-speed blower a very minimum number of blower cycles and on-off cycles of the motor-compressor.

"The circulating pump for the tank is not normally used but there is not much question that the energy used here and the

cost of same was more than offset by its savings in having water heated ahead of demand and the lower temperature required.

"The blower operated 500 hours on high speed, and then note this, referring back to my previous comments, it operated 3,900 hours at low speed, or a total of 4,400 hours of blower operation. The water used which, of course, is the heat source totaled 229,921 cu. ft.

### Planning Was Factor In Outstanding Success

"I believe," Millsom said, "that some of the striking features of this installation and the fact that it has been so successful are due to the time spent in deciding the type installation desired even though it was an existing home.

"For example, the two-speed blower which we mentioned before was of much value and added comfort in the home. The use of the water storage tank meant that a water temperature of 87° to 92° could be maintained and that was the temperature of the water circulated most of the time, though in extremely cold weather it can be stepped up.

"High wall supply grilles were used and with this type of system, air blowing across coils, the air temperature caused absolutely no feeling of drafts. This low rate ventilation and

(Continued on next page)



**Table 1—Operation of Heat Pump  
In Wisconsin Residence**

	Heating Oct. 1, '53 to June 12, '54 and Sept. 7 to 30, '54 6541 degree-days		Cooling June 12- Sept. 7	
	Kwh. Used	Kwh. per degree-day	Kwh./DDD/ 1,000 cu. ft. heated space	Kwh. Used
Compressor .....	5959	.91	.070	470
Well pump .....	578	.09	.007	32
Circ. pump to tank .....	393	.06	.005	35
Total collection and storage .....	6930	1.06	.082	537
Circ. pumps to air coil ..	507	.08	.006	
Blower .....	967	.15	.010	
Total heat distribution ..	1474	.23	.017	83
Total energy used .....	8404	1.29	.099	620
Hours of compressor operation: .....	1295			102.51
Hours of blower operation:				
High speed .....	500		(approximate)	
Low speed .....	3900		(approximate)	
	4400			
Well water handled, cubic feet: .....	229,921			3459
Hours per compressor cycle .....				.88

**Table 2—Cost of Power for Heating During 1954**

	Kwh.	Billing
Heat collection and storage .....	7,332	\$190.60
Distribution and ventilation .....	1,531	22.96
<b>Total .....</b>	<b>8,863</b>	<b>\$213.56</b>

## Heat Pump Installations--

(Continued from preceding page) constant delivery of heat to the house at a rate about equal to the heat loss of the house, as it exists from time to time, gives superior heating comfort plus all the advantages to be found only in this flame-less type of heating.

"In addition to this an outdoor reset thermostat to control the tank temperature and compressor were one of the fine points that helped make this installation outstanding. You can understand how important all of these things are when the actual c.o.p., or efficiency of this system, is over 4 to 1.

"With the total energy used as I discussed of 8,404 kwh. for 6,541 degree days you see that they really enjoyed a system that cost them no more, if as much, to operate than they would have had to pay for oil. This complete system with its long and infrequent compressor operation periods and low head

pressure also adds greatly to the life of the compressor," Millsom commented.

"There are at present over 400 water-to-water heat pumps of this type installed that I happen to be familiar with in commercial, residential, and industrial applications and this happens to be the only one where any type of water treatment at all has been used.

### Water Treatment Method

"During the latter part of last winter Burdick felt that there might be a chance that some foreign matter had gotten into the system from his well or from the water itself.

"He filled the evaporator with a 1/20th solution of chlorox in hot water of 2,500 p.p.m. of available chlorine. He left it in for one hour and then flushed it out through the drain connection and the first tub full removed was quite dirty and full

of burnt orange-colored material and contained something less than a teaspoonful of very fine sand. Compressor kilowatt hours/degree days for the first ten days of March was .97.

"This chemical capsule was placed in the line on the 11th and then on checking, he found that the compressor kilowatt hour/degree day from March 11 to the 16th, when he took exact tests, was .87, which as you can see amounts to some difference in over-all efficiency and makes it most important that we at all times be sure that the copper tubes are always clean.

"Water treatment now consists of 1 oz. of household chlorox and 20 oz. of phosphate for about every 10,000 cu. ft. of well water," Millsom said.

### Tables Show Costs

Tables one and two "illustrate that with 50° ground water as the heat source a heat pump can do a truly superior job of heating a home comfortably in our climate and at reasonable operating cost."

Millsom added that "the former cost with oil, when the house was considerably smaller than at present, averaged \$200, according to Burdick."

Second heat pump installation described was for a one-story frame house in Parma, Mich., which has 1,500 sq. ft. of heated area and 12,000 cu. ft. Heat loss figured at 41,000 B.t.u./hr. at 0° outside, 72° inside; 46,000 B.t.u./hr. at -10° outside, and

52,000 B.t.u./hr. at -20° outside. A 3-hp. Acme Flow-Temp water-to-water heat pump was installed, used approximately 12 gals. per minute of 52° well water as the heat source.

This system employed a radiant ceiling panel installation plus individual room air handling units in some to provide circulation of air, "particularly needed here because of large picture windows and definitely required for summer operation," Millsom explained.

Copper tubes were used in the radiant panel and the heated water temperature ran from approximately 87° to 110°. Panel has an m.r.t. of 72° and the mean water temperature is 105° at 0° outside temperature.

"Control of the heating cycle includes an electronic indoor-outdoor control which operates compressor and circulating pump. The heat pump is installed in a corner of the garage which is attached to the house though not heated, while in the Wisconsin home the heat pump was located in the basement.

"Copper tubing is run from the heat pump directly to the ceiling panels as no water storage tank is used, and to the three remote room conditioners which in this instance are installed in closet areas with only a grille showing in the occupied space.

"There is one attractive grille in the living room high in the wall supplying 300 c.f.m. of filtered and heated or cooled air to this area while another room

unit is installed over the hall ceiling in the area between the kitchen and bedrooms, and the third unit is installed over the ceiling in the bathroom," Millsom said.

"We have gone into details on the operation, compressor efficiency, degree days, and the kilowatt hours used in the Wisconsin home and, therefore, I do not feel that it is necessary in this instance as the degree days and c.o.p. are approximately the same.

### Cost Averaged \$21 Per Month

"There were 6,283 degree days, Sept. 8, 1953 through May of 1954, and it averaged out at exactly \$21 per month and here again we have actual operating information just as we have for the Wisconsin home.

"I think the main thing to remember in the consideration of a heat pump is the fact that operating costs of the water source type, as we have graphically illustrated, since supplemental heat is not required, is efficient and economical in our northern or colder climates and first cost, though naturally much higher than just that of purchasing a heating system it is at or slightly below the cost of the regular type heating system with which we are all familiar whether it be oil or gas, plus the installation of summer air conditioning," Millsom emphasized.

(To Be Continued)

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Gives quick connection and disconnection, with instant automatic flow or shut-off. To connect Coupling, and open line to flow of fluid, merely push Plug into Socket. To disconnect, a slight pull on sleeve releases Plug and shuts off supply end of line.

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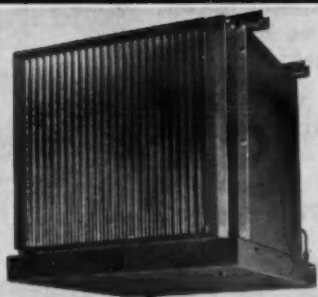
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**A-P Lists Wholesalers Handling Control Line**

—KEY NO. Q-720—

MILWAUKEE — A two-color folder listing the names of all wholesalers handling A-P controls has been sent to all refrigeration product manufacturers and to more than 18,000 product designers in all metal working plants. A-P Controls Corp. announced recently.

"A greater realization of the wholesalers' importance in all industries will do much to make product designers more aware of the consideration of a replacement supply source when they specify component parts for the original equipment market," the company commented.

A-P said that it is also identifying wholesalers by issuing them a new decal for posting in their sales rooms.

**3 Types of Central Station Cooling Units Described**

—KEY NO. Q-721—

DETROIT—A new 8½ by 11-in., 20-page catalog (Bulletin No. 8127) describing three types of central-station, cabinet-type air conditioning units is now available from American Blower Corp. here.

Ten pages of the catalog are devoted to tables and graphs.

**New G-E Buyers' Guide For Home Heating Controls**

—KEY NO. Q-722—

SCHENECTADY, N. Y. — An illustrated buyers' guide, showing models, applications, and typical installations of G-E domestic heating controls has been announced by the General Electric Co.

Designated GEC-1030, the 16-page, two-color publication con-

tains photos, prices, ratings, dimensions, and ordering information on all standard heating control units.

The booklet illustrates product features, and describes service facilities, the G-E exchange plan, and promotional aids available to heating control dealers.

**Motor Selection Outlined In Peerless Catalog**

—KEY NO. Q-723—

WARREN, Ohio—A new 8-page catalog describing the Peerless Electric Co.'s line of ½ to 30-hp., single-phase, polyphase, and d.c. motors is now available.

Peerless Bulletin SDA-155 gives information on how to select the proper motor; things the manufacturer should know about the motors they require; standards and specifications to which Peerless builds; enclosures; special mountings and modifications; data on fractional and integral horsepower frame sizes; and a listing of Peerless sales and service offices.

**Blower Tips Offered for Installing, Servicing**

—KEY NO. Q-724—

CLEVELAND—A six-page folder entitled "Tips on Blowers" has been prepared by Viking Air Conditioning Div. of National-U.S. Radiator Corp. as a reference when installing, adjusting, or servicing any make of blower.

The folder, which folds to pocket-size (8¼ in. by 3¼ in.), contains many illustrated "tips" on mounting and adjusting belts and pulleys, installing a blower, adjusting the blower speed for heating or cooling, and how to order replacement parts.

**Catalog Gives Application Data on Valves, Fittings**

—KEY NO. Q-725—

PITTSBURGH—A new, 24-page catalog giving size and application data for brass valves, accessories, and fittings for refrigeration and air conditioning applications is available from Superior Valve & Fittings Co. here.

The catalog, designated R-5, incorporates recent technical data on relief valves, check valves, and low micron testing of standard line and globe valves, the company said.

**Folder Series Announces Centrifugal Pump Line**

—KEY NO. Q-726—

ASHLAND, Ohio—A new folder and three follow-up pieces announcing a complete line of centrifugal pumps for air conditioning has been introduced by The F. E. Myers & Bro. Co. here.

Prepared specifically as a direct mailing piece for use by distributors, the new folder is directed toward prospective users of recirculation pumps for air conditioning units. Pertinent facts are presented and the follow-up mailing cards are designed in a humorous vein.

**Air Conditioning Control Centers Described**

—KEY NO. Q-727—

GOSHEN, Ind.—Penn Controls, Inc. announces a new bulletin on air conditioning control centers for manufacturers of year-round air conditioning units.

The new 12-page bulletin, designated Bulletin No. 3054, describes the various control centers for commercial and residential air conditioning.

Also included are typical wiring hook-ups for single-stage and two-stage systems.

**Industrial Vacuum Cleaner Equipment Outlined**

—KEY NO. Q-728—

ST. PAUL—Furnace, air conditioning, and boiler cleaning equipment is discussed in a new three-fold, two-color stuffer published by the Premier Co., manufacturer of industrial vacuum cleaners and floor maintenance equipment.

Specific interest is placed on the new Premier Spic-Span machine developed by the company for low-cost, high-profit furnace cleaning. New design of the cleaner is highlighted and cleaning tools for the Spic-Span unit and P-098F heavy-duty unit are listed.

**Alpha Metals Issues New Bulletin on Solder Alloys**

—KEY NO. Q-729—

JERSEY CITY, N. J. — Alpha Metals, Inc. has issued new literature showing some of their "Special Soft Solder Alloys" in chart form. The bulletin also contains brief descriptions of each of the alloys and some of their uses.

**Canadian Equipment, Supplies Listed**

—KEY NO. Q-7210—

VANCOUVER, B. C., Can.—Refrigerative Supply, Ltd. of Canada has issued a new 132-page catalog covering the line of air conditioning and refrigeration equipment and supplies handled by both Vancouver, B. C. and Calgary, Alberta divisions.

Prepared by William Schaller Co., Inc., Hartford, Conn., the catalog contains illustrations and all specifications necessary for ordering by mail and is cross-indexed for quick reference.

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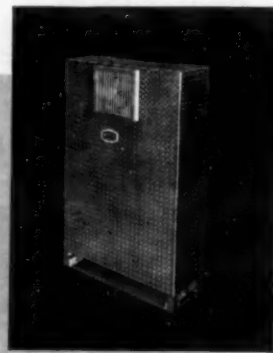
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## 'Wet' Heating, Cooling Course Set For Aug. 9 to 11

NEW YORK CITY—For the first time in the eastern portion of the country, a three-day I-B-R Short Course in advanced heating and cooling design and installation methods, including a plan for low-cost homes, will be held at the University of New Hampshire at Durham Aug. 9-11.

The course is co-sponsored by the university and the Institute of Boiler & Radiator Manufacturers.

Planned to provide practical "job experience" in cutting costs of hot water heating and cooling systems, the course is open to contractors, wholesalers, and others concerned with designing heating systems.

Among the phases of hot water heating to be covered in class room sessions and lectures are: "How to Design a Zoned System"; "Designing a Competitively Priced Forced Hot Water System (Series Loop baseboard) for Low-Priced Homes (with materials list and cost estimates)"; also "Chilled Water Cooling Systems"; "Basic Heat Loss Calculation"; and "Systems for a Ranch Type House and a Motel."

Registration fee is \$30 per student, which includes tuition, lodging in university dormitories, and a clambake.

In addition to members of the university engineering staff, instructors will include Arthur L. Wales, I-B-R technical secretary and widely-known instructor, and engineering representatives of the manufacturers of equipment.

Additional information may be obtained by writing "Short Course on Hot Water Heating," Extension Service, University of New Hampshire, Durham, N. H., or the Institute of Boiler & Radiator Manufacturers, 608 Fifth Ave., New York 20, N. Y.

## Marsh Names Kneifel In Pittsburgh Area

SKOKIE, Ill.—Earle L. Kneifel has been appointed sales representative for Marsh Instrument Co. in the Pittsburgh area. He will serve all of southwestern Pennsylvania extending as far east as Juniata county, the company said.

Before becoming associated with Marsh, Kneifel was employed as an engineer with North American Aviation.

## Church Cooling Contract

GREENVILLE, Ala. — The Board of Stewards of the Greenville First Methodist Church has authorized the letter of a contract to the Brunson Weather Makers, local representative of the Carrier Corp., to air condition the sanctuary and the newly-erected educational building.

## To See If 1,000-Sq. Ft. Home Can Be Heated, Cooled for \$120 per Yr.

TOLEDO — Can a typical home of 1,000 sq. ft. of heated floor area here be heated and cooled for \$120 a year?

Tyler S. Rogers, technical consultant for Owens-Corning Fiberglas Corp., hopes to find out in tests to be conducted over a two-year period beginning this fall.

Rogers recently invited local builders to participate in the tests. Test houses will be heated and cooled by gas, heated and cooled by electricity, and heated by gas and cooled by electricity. He indicated oil heat may be included with cooling by electricity.

Contractors are to submit their plans for test homes to

him. He said he would then amend them for amount of insulation and equipment he thinks they should have.

Test home builders will also have to agree to sell the homes to persons who would permit their heating and cooling bills to be studied and publicized over the two-year period.

Rogers said that local utilities have agreed to meter the heating and cooling separately so costs can be studied.

He explained that he planned to select houses of different sizes and price and with different kinds of heating and cooling equipment. Adjustments in annual operating costs would be made according to area.

## Permaglas Div. Names C. L. Hewitt, Jr. as Heating Products Mgr.

MILWAUKEE — Appointment of C. L. Hewitt, Jr. as manager of heating products for the Permaglas Div. of A. O. Smith Corp. was announced recently by J. H. Brinker, division manager.

Hewitt will be responsible for all integration and programming of Permaglas' entry into the heating field.

## Springfield, Ill. Outlet Named for Weathertrons

BLOOMFIELD, N. J. — Appointment of Automatic Heating Supply, Inc., Springfield, Ill., as a wholesaler for G-E Weathertron products has been announced by General Electric

Co.'s Weathertron Dept. here recently.

Automatic Heating Supply will distribute Weathertrons in the Illinois and Missouri area, where they currently distribute G-E home heating and cooling equipment and packaged air conditioners.

A. E. Yuskanich is president of the firm.

## Viking Div. Names Basl Product Design Engineer

CLEVELAND — John E. Harris, manager of engineering for Viking Air Conditioning Div. of National-U.S. Radiator Corp., announces the appointment of George J. Basl as product design engineer.

For the past 14 years, Basl has been on the engineering staff of the Heater Div. of Eaton Mfg. Co. here.

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# Moisture Migration In Systems

## Studies Show Its Relation To Acid Formation Leading To Possible Breakdown of Some Parts

MILWAUKEE—Moisture in refrigeration systems may not be enough to cause freeze-ups, but can still be enough to result in an acidic condition which may eventually cause the breakdown of certain operating components of the system.

This need for stringent control of moisture content in a refrigeration system was brought out in the paper "Moisture Migration in Hermetic Refrigeration Systems As Measured Under Various Operating Conditions," presented by W. R. Briskin, manager, Advanced Engineering, General Electric

Co., at the mid-year meeting of the American Society of Refrigerating Engineers.

Some of the principal conclusions reached by Briskin in his studies on this subject were the following:

### Characteristics Differ Between 'F-12,' 'F-22'

Refrigeration systems charged with "Freon-12" and "Freon-22" have greatly differing moisture characteristics.

Moisture migration calls attention to acid migration which is considered a cause for de-

composition of cellulose in motor insulation, and increasing moisture content in the system.

Increasing moisture content with time under comparable operating conditions should be considered as indication of progressing deterioration in a refrigeration system.

"Experience has shown that excessive moisture can cause operating difficulties through freeze-up of the expansion device or through chemical reactions resulting in the failure of component parts. Elaborate procedures have been introduced in order to obtain a low

initial moisture level in a system and to maintain a "safe" limit during operation.

"With regards to freeze-ups, this limit can be determined rather easily and fairly accurately. The dewpoint of the refrigerant should not exceed the temperature in the expansion device under any operating condition where this temperature is below the freezing point of water, 32° F. Safe limits with respect to harmful chemical reactions are not as readily accessible to investigation.

### Charge Consists of Variety of Substances

"The charge of a refrigeration system consists of a variety of substances, such as the refrigerant, lubricating oil, possibly several additives to the oil, and small amounts of impurities, one of which is moisture.

"This charge is exposed to and in contact with numerous different metals and perhaps their oxides, and organic materials such as the shaft seal in an open refrigeration unit or the motor electrical insulation in a hermetic unit. This complex situation is further aggravated through great temperature differences existing at various points in the system.

### Safe Moisture Limit Depends on 3 Factors

"The safe moisture limit will depend greatly on the design and operating conditions of the type of unit, and on the quality of preparation of each individual unit."

The moisture characteristic of a refrigeration system charged with "Freon-22" is considerably different from that charged with "Freon-12," the study showed.

When a refrigeration system is shut down, the liquid refrigerant normally transfers into the crankcase where it remains in solution with the lubricating oil. During the first few minutes of operation, the liquid boils off, progressively cooling the remaining solution at the same time.

For low temperatures of the refrigerant the moisture content in the liquid phase is considerably greater than in the vapor phase. It may be assumed that the vapor boiling off during the initial period is carrying a low

moisture content leaving most of the moisture in the liquid portion and also in the oil. With progressing time, this moisture is released and is responsible for the increasing moisture content in the condenser vapor.

This condition could not occur in a unit charged with "Freon-12," said the author, because here the larger portion of moisture is contained in the vapor.

It was shown that the final moisture content with these conditions was lower than had been expected. It could not be expected, said the paper, that the deficiency in moisture is balanced by an increase in the moisture content of the lubricating oil. A greater probability seems to be that moisture is absorbed by the cellulose of the motor insulation.

During non-operating conditions the cellulose was exposed to the moisture contained in the vapor phase of the refrigerant. During operation, the entire refrigerant is carrying the average moisture which means for the vapor phase a considerably higher relative moisture content. The unit was operating at rather low winding temperatures which may justify the opinion that moisture has been absorbed by the cellulose.

This condition is not probable on units which are charged with "Freon-12," it was stated, since due to the moisture equilibria for "Freon-12," the windings are exposed to lower relative moisture content during operation than under non-running conditions.

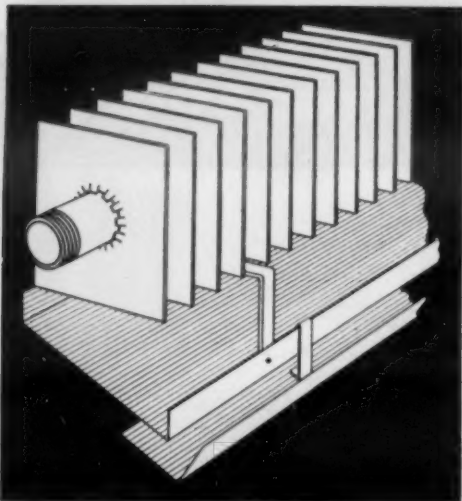
When testing a refrigeration system for its moisture content, Briskin said, one should always be aware of the operating condition of the system at the particular time. To obtain reliable and reproducible data, equilibrium must be established within the system.

### Small Differences May Become Large When System Is Operating

Small differences in moisture content under non-operating conditions may mean great differences during operations.

Acids may be formed by hydrolytic or pyrolytic decomposition of the refrigerant or through oxidation of the lubricant.

(Concluded on next page)



### Square-Finned Pipe

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**CONTROL** is most valuable when used on air wash water systems and chill water circuits. It can also be used for controlling fungus growth and algae in evaporative condensers, cooling towers, ponds and other water storage systems. When used according to directions it is not toxic.

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Cables: TEMTUR LONDON



## Moisture--

(Concluded from preceding page) cating oil by free or combined oxygen in the system. It is almost impossible to keep a refrigerant entirely free of traces of acidic material.

Cellulose breakdown is particularly sensitive to small amounts of acidic substances. Partial decomposition may not be sufficient to result in mechanical or electrical breakdown of the insulation; however, the breakdown products (mainly water, carbon monoxide, and carbon dioxide) will be released to the system.

### Slow Hydrolysis Of Refrigerant

The additional moisture then present in the system may be sufficient to promote slow hydrolysis of the refrigerant which in turn would result in more acids in the system by increasing the reaction rate. It can be expected that the rate of deterioration of the system will increase steadily, and may result, over a long time, in a breakdown of the system.

In an experiment in which a refrigeration system was permitted to reach temporarily high electrical overload, increased moisture content after shutdown was observed. A sample of non-condensable gases taken from the unit and evaluated on the mass spectrometer indicated high carbon monoxide content.

The refrigeration system did not yet show any signs of corrosion. This may suggest, said Briskin, that careful determination of moisture content as a function of time can indicate dangerous conditions in refrigeration systems long before any danger signals may be apparent, or complete breakdown has occurred.

## Sanders Heads Frick New Orleans Branch

WAYNESBORO, Pa. — Frick Co. announced the appointment of John T. Sanders III as manager of its branch office in New Orleans.

Sanders has been selling Frick refrigerating and air conditioning equipment in the area around that city for the past eight years.

## Ideal Dispenser Names Coast Service Station

BLOOMINGTON, Ill. — Appointment of Nord Hermetic Co. of San Leandro, Calif. as authorized Ideal refrigeration service station for the three Pacific coast states was announced recently T. G. Thompson, vice president of sales for Ideal Dispenser Co. here.

He said users in California, Washington, and Oregon can now return Ideal package refrigeration systems and cold wall refrigeration venders to Nord for repair and service of the refrigeration systems.

## Injection System To Up Compressor Efficiency Seen as Practical Possibility

MILWAUKEE — Injection systems that will improve compressor efficiency are a practical possibility, the American Society of Refrigerating Engineers was told at its 42nd semiannual meeting here by Dr. Willis Merle Carter, professor of machine design at the University of Kentucky.

"With injection you won't get phenomenal results but you can get some increase in efficiency," Dr. Carter declared.

Increases in coefficient of performance as high as 11% are theoretically possible with the injection cycle, Dr. Carter said.

Conditions assumed for this, he explained, are a -10° F. evaporator temperature with "Freon-12" as the refrigerant.

At a 40° F. suction temperature, however, the boost in efficiency was only 3%, he said.

Tests with an actual rotary compressor using the injection system led Dr. Carter to conclude "it is probable that a greater gain than the theoretical value may be realized."

In addition to discussing theoretical problems and describing test results, Dr. Carter suggested a possible design of an injection nozzle for use with small, rotary compressors.

The simple nozzle would be pressure operated. Normally, pressure of a spring on a valve would keep the nozzle openings to the liquid receiver and compressor closed.

Increase of pressure within

the compressor as the machine rotates would overcome the spring pressure and open the valve, allowing liquid refrigerant to flow into the compressor and evaporate. Rotating piston would cause the valve to close and stop injection.

Several such injection nozzles could be spaced around the compressor, Dr. Carter indicated.

### Louisiana State Bldg. Gets Year-Round System

NEW ORLEANS — The Louisiana State Building Authority has authorized architects to proceed with the drawing up of plans and specifications for the \$4,000,000 state office building to be erected at the new civic center site.

The eight-story building will feature year-round air conditioning. It is to be used by some 33 existing state agencies for office space.

## John Zant Speaks To Canadian Group

CALGARY, Alb., Can.—John L. Zant, west coast representative for Copeland Refrigeration Corp., addressed more than 100 Canadian refrigeration specialists recently at Calgary and Edmonton.

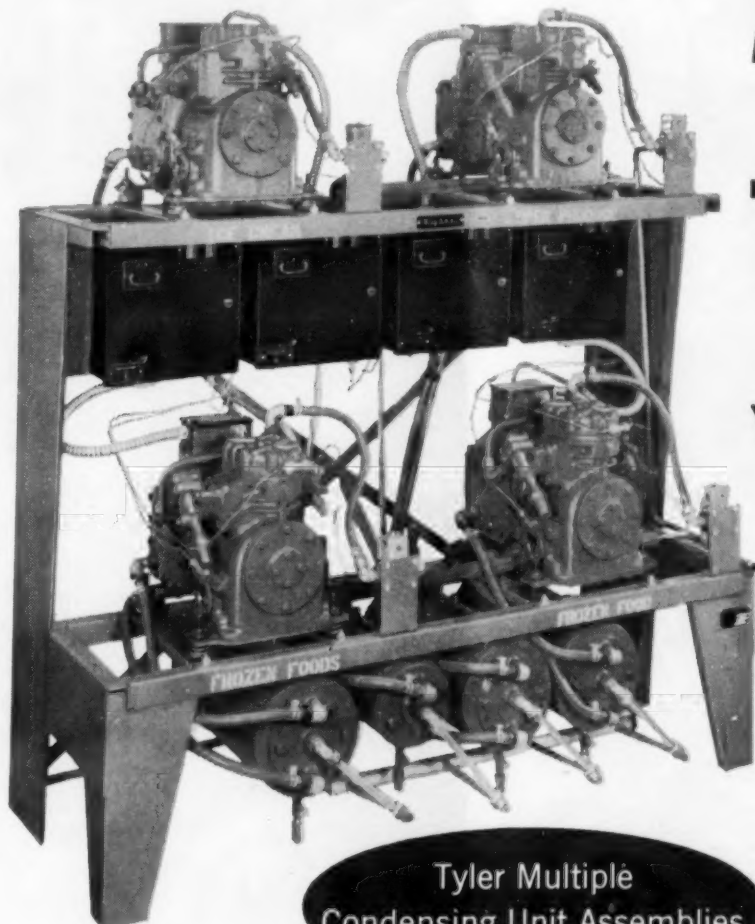
Zant's topic was "Electrical Problems Encountered With Hermetic-Type Condensing Units." He illustrated his discussion with a large Copeland commercial hermetic condensing unit. It is specially equipped with a comprehensive electric control panel.

A member of the Copeland staff for more than six years, Zant is the author of many technical articles on hermetic condensing units and their application.

Big, new, unlimited  
profit opportunities when you—

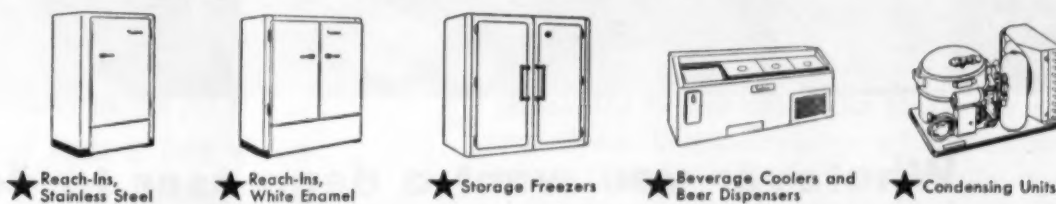
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Agents set impressive  
new sales records!**



Tyler Multiple  
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Tyler Agents now offer complete *balanced systems*. Tyler Assemblies cut costs... save valuable floor space... insure better performance... offer *controlled installation and operating costs!* Completely engineered—detail installation work done at Tyler factory; delivered as one compact assembly!



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★ Beverage Coolers and Beer Dispensers

★ Condensing Units

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Cash in on the *urgent need for both normal and zero storage* of perishables in food service establishments! Big new Tyler line... stainless steel and white enamel Tyler Storage Freezers, Reach-Ins, Beverage Coolers, Sectional Storage Freezers, Beer Dispensers, Condensing Units!

**Tyler Sales-Cases 'way out ahead —  
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# TYLER

The BIG name in food refrigeration

TYLER REFRIGERATION CORPORATION, Niles, Mich.  
In Canada—write Tyler Refrigerators, 128 Avenue Road, Toronto, Ont.

TYLER LEADS—others follow!

In store after store across the country—Tyler has revolutionized open merchandising! The Sales-Case line is proving to be one of Tyler's greatest "Advanced Design" successes! Operators have found that *Sales-Cases pay off* in increased sales, faster turnover, easier loading, cleaning and maintenance—*better merchandising at lower cost!*



## Refrigeration Problems And Their Solution

By Paul Reed

For Service and Installation Engineers



### Service Trouble on 'F-22' vs. 'F-12' (5)

To paraphrase Mark Twain's often quoted and much abused old bromide about people doing a lot of talking about the weather but no one doing anything about it, corrosion in connection with the refrigerants is in about the same category. There has been a lot of talk about it, but there is precious little published factual data, and almost no quantitative data that

this writer has been able to find.

#### WHAT ARE CORROSION LIMITS?

We do not even know with any certainty what the corrosion limits are in relation to moisture content. It would be extremely helpful to know if a system that is dry enough that no freeze-ups occur at the expansion valve or capillary tube, is also dry enough from a corrosion standpoint.

That is, if we dry a unit, either in the factory by factory methods, or in the field, mainly

by evacuation and the use of driers, dry enough that we have no freeze-up trouble, is that dry enough; or must we dry the unit still further in order to prevent, or rather reduce corrosion to a point that can be considered negligible or at least acceptable.

For example: A commercial system charged with "Freon-12," uses a blower coil operated at an average temperature with the machine running, of 22° F. By the end of the running cycle, the blower coil is operating at 20° F., and the low pressure control is set to cut off at 21 p.s.i.g.

According to Figs. 1 and 2 in previous instalments of this series, the liquid "Freon-12" in the liquid line just ahead of the thermostatic expansion valve must have a moisture content of less than 16.6 parts per million

(p.p.m.). Therefore, we are going to have to dry that system, in one way or another, so that the liquid to the TX valve will be drier than 16.6 p.p.m., or we will have a stopped up or sticky expansion valve, because of freeze-up.

Is 16.6 p.p.m. dry enough that the corrosion brought about directly or indirectly from the moisture is acceptable for field practice? Or if not, how much drier must that job be, and how will we tell, in the field, when we have it dry enough?

A similar system charged with "Freon-22" operates in a cut-out pressure of 43 p.s.i.g., corresponding to about 20° F., and an average blower coil temperature, during operation, of approximately 22° F. According to Figs. 1 and 2, the liquid "Freon-22" just ahead of the TX valve must have a moisture

content of less than 472 p.p.m. in order to prevent freeze-ups. Is that dry enough from a corrosion standpoint; and if not, how dry must the system be, and how can we tell in the field when we have the system dry enough?

#### 15 OR 80 P.P.M. FOR 'F-12'?

For "Freon-12," values all the way from 80 p.p.m. down to about 15 or 20 p.p.m. have been mentioned as optimum moisture content of the refrigerant.

If the 80 p.p.m. value is correct for "Freon-12," then we need not be concerned with moisture content as being a serious matter, insofar as corrosion is concerned, on any installation having an evaporator that is below 32° F. at any time. At 32° F., the solubility of "Freon-12" is about 25 p.p.m., so we would have to dry the "Freon-12" to 25 p.p.m. or less, to prevent freeze-ups, and 25 p.p.m. would be much drier than the 80 p.p.m.

What if we accept the lower value of 15 p.p.m. which is the water solubility of liquid "Freon-12" at about 14° F.? At that water content, any system with an evaporator below 14° F. would be dry enough. However, systems with evaporators above 14° F. would have to dry their refrigerant drier than was necessary to prevent freeze-up.

To the best of this writer's knowledge, no values have been publicly expressed for "Freon-22," so we do not even have figures to start guessing on, let alone any figures with any semblance of accuracy.

Research by a number of companies and laboratories is being performed to get the answers to these questions, so perhaps within coming months we may have a better working understanding of how dry a "Freon-12" or "Freon-22" system must be; also, how we in the field will be able to determine the relative humidity of the refrigerant to conform to the required conditions.

All of the indications are that for both "Freon-12" and "Freon-22," we must dry a system drier than is necessary to prevent freeze-up, in order to reduce corrosion to an acceptable level.

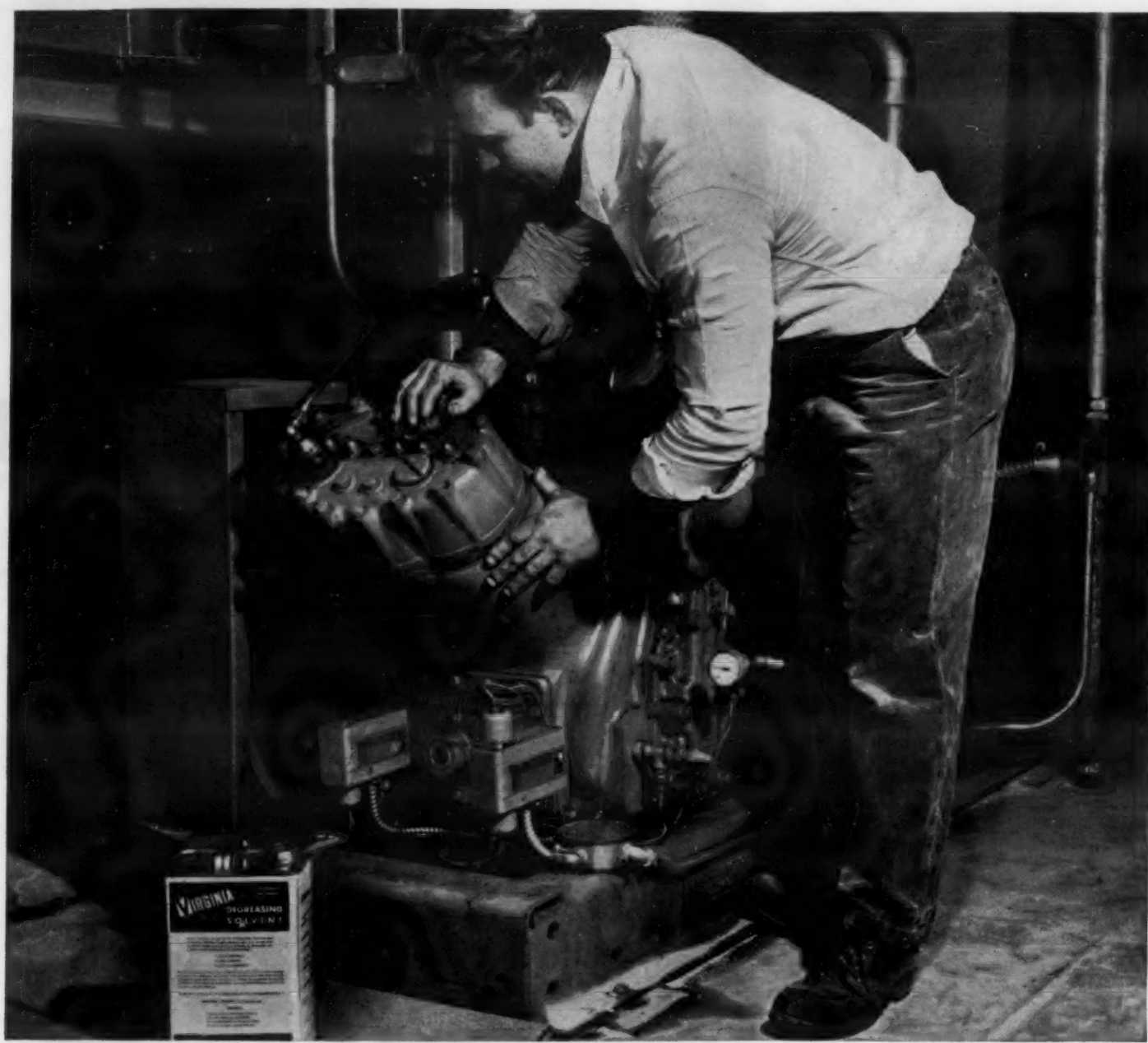
#### WHAT CAUSES ACIDS?

Acids are formed in refrigerating systems in two main ways, (1) the chemical action between the refrigerant and water, and (2) the decomposition of the compressor oil, or in extreme instances, of the motor insulation.

All of the halogenated hydrocarbon, or "halocarbon" refrigerants, as they are frequently called, contain chlorine or fluorine. This class of refrigerants include the "Freons," "Genetrons," "Arctons" (in Canada and Great Britain), Carrene-7 (an azeotropic mixture of approximately 74.2% "Freon-12" and 25.8% "Genetron-100"), "Kulene-131," methyl chloride, methylene chloride (also known as Carrene-1), methyl bromide, and others less well known.

Hydrochloric acid (also called muriatic acid, that is used as a soldering flux) is formed by the chemical action of water and chlorine. Hydrofluoric acid, a

(Continued on next page)



## Whatever you want a degreaser to do Virginia No. 10 does—better

Virginia No. 10 is the trade name for a new type of degreasing solvent made expressly for refrigeration, electrical and automotive use. Virginia No. 10 removes oil, grease and grease-bound dirt in no time flat. Even more important, it can be used with comparative safety. You can stand a concentration of 200 parts per million for hours without harm—it's only about 1/4

as toxic as carbon "tet"—flammability hazard is low.

In addition to very good drying properties, Virginia No. 10 is non-corrosive and, unlike some solvents, will not cause machined parts to rust. Nor will it attack electrical insulation or leave any current-carrying residue. Virginia No. 10 is available in 1-gallon factory-filled cans from your favorite wholesaler.

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V-METH-L • CAN-O-GAS • PERMAGUM • PRESSTITE TAPE  
SUNISO REFRIGERATION OILS  
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Only about 1/4 as toxic as carbon "tet."



Virginia No. 10 is perfect for electrical parts.



Does not readily burn—low flammability hazard.



## Service Trouble on 'F-12' vs. 'F-22' --

(Continued from preceding page) very powerful acid that is used to etch glass, is formed by the chemical action of water and fluorine. The amount of these acids that are formed depends on how much water is available in the system and on the temperatures in the system. Normally, the amount of these acids in a system is very, very small.

These acids, when diluted with any water in the system, act on and corrode the metals in the system, cast iron, steel, copper, brass, tin, lead, etc., to form "salts." Acids may also attack gaskets and the oil itself. Then to compound the chemical confusion, there may be alcohols, and various other chemicals put in the system as additives for the oil, as foam and rust inhibitors, etc. From this conglomeration, many chemical actions can result, especially if operating, condensing, and discharge temperatures are high.

### HEAT AN IMPORTANT FACTOR

Chemical reactions are accelerated by high temperatures. In general, an increase in temperature of 18° F. (10° C.) will double the reaction rate. So again; keep that condensing pressure down!

So it pays to keep the system dry, clean, and free of any and all contaminants. Until we know how dry a system must be, it is simply common sense to keep it as dry as we can. Not just dry enough that we don't have freeze-ups. Not just dry enough to get by. But as dry as we can get it with available equipment and methods that are suitable for field use, and that are economically feasible.

Moreover, some extra time and expense in doing a careful job of installation will save many dollars later, in service costs. You can "sell" this idea to your customer if you can back it up with service records, which is another reason for maintaining good service records.

Keep a system clean and as chemically simple as possible. It is this writer's firm conviction, based on more than 35 years' experience, that a refrigerating system should contain nothing but a good, highly refined oil of suitable characteristics, and clean, dry refrigerant. No air, no water, no nothing, but good oil and refrigerants.

### KEEP 'EM DRY: IT PAYS

Service managers and service engineers who use these careful, tried and true methods have a minimum of service trouble on their installations; and they can produce service records and satisfied customers to prove it.

Nor is this wandering from the subject. It is the actual, practical, usable conclusion that is supported by the foregoing "theory" and by field practice.

It has a direct bearing on your observation that you seem to have more motor-compressor trouble on window units than other types of equipment.

One reason undoubtedly is that their evaporators operate at temperatures above 32°, so they are not subject to freeze-

ups. Consequently, you do not, and even the manufacturers do not have to be careful about how dry those systems are.

Try putting a big drier on every window unit you install on which a drier can be installed. When you have occasion to open one of the units, see if there is not less evidence of corrosion in the units with driers than those without.

Next we will discuss the matter of oil decomposition.

(To Be Continued)

### Wins Church Contract

CHATTANOOGA, Tenn.—The Lennon Co. submitted a low bid of \$46,727 for complete air conditioning and heating equipment for the new \$300,000 educational building of Brainerd Baptist church.

## New Acme Industries Bldg. Will Add 25% to Production Facilities

JACKSON, Mich.—A modern, single-story building which will eventually encompass over a half million square feet of factory and office space has been started here by Acme Industries, Inc., manufacturer of air conditioning and refrigeration equipment.

Ground was broken recently for the first unit in the concern's expansion program. Completion is scheduled for this fall. The initial unit will immediately add about 25% to Acme's production facilities.

Plans for the 55-acre location on the outskirts of Jackson include ample parking space and a recreation area for employees.

"Our expansion program started in earnest after our sales increased last year by

35%," stated Kenneth A. Weatherwax, president of Acme. "With the rapid growth of air conditioning as a major element in the expanding building industry and the number of new and improved products that are being readied for this market at Acme, it seems likely that additional units in our expansion plan will be completed rapidly."

The new plant will embody advanced features of factory architecture, including a minimum of glass area, modern fluorescent lighting, and basic structural elements designed for permanency and ease of maintenance, it was pointed out.

Plant equipment will be selected and installed so as to take full advantage of automation techniques and to result

in an economical, high-production operation, the company said.

The plant is located adjacent to the Jackson Municipal Airport and to a main line of the New York Central Railroad. A main thoroughfare forms one boundary of the site with a new expressway a mile away.

## Kaminsky Speaks to Indianapolis RSES

INDIANAPOLIS—At a recent meeting of the Indianapolis section of the Refrigeration Service Engineers Society, Aaron R. Kaminsky, Bush-Heat-X representative, spoke on automatic defrosting.

A Bush demonstrator was used to show the operation of both the "HG" hot gas defrost and "ED" electric defrost systems—two new Bush "Inner-Fin" products.



## Bank on a Task-Force Truck to Cut the Cost of Moving Goods!

You'll save money on the job and be way ahead at trade-in time with a work-styled Chevrolet Pickup.

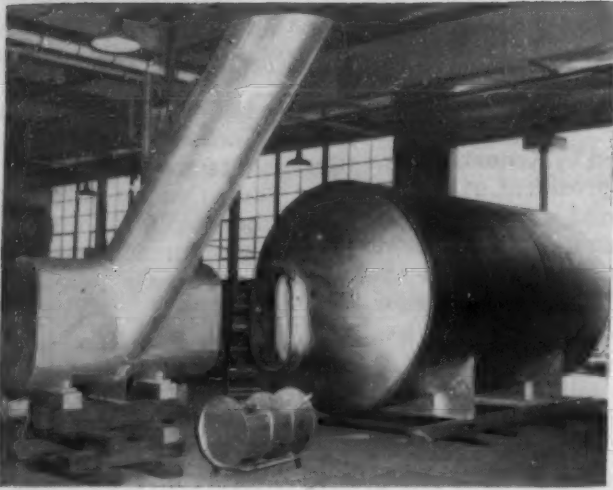
You save with modern high-compression power—In Chevrolet's new pickup truck, a new Thriftmaster engine is supplying the power punch—a big valve-in-head wallop, which means you get the most out of a gallon of gas. Fast acceleration shaves stop-and-go time and helps keep you on top of crowded schedules. And even in cold weather, you start more quickly with Chevrolet's double-punch 12-volt electrical system. That's a big advantage in itself—a husky reserve of electrical power when you need it!

You save with the most modern truck features your field has ever seen—New Work-Styling—so distinctively different that your Task-Force Truck is a profitable advertisement-on-wheels. New Overdrive or Truck Hydra-Matic, each an extra-big time and money saver, available at extra cost. New front and rear suspension systems, High-Level ventilation, outstanding cab comfort—there's everything to make driving less a chore. And you're bound to save money when drivers maintain peak efficiency!

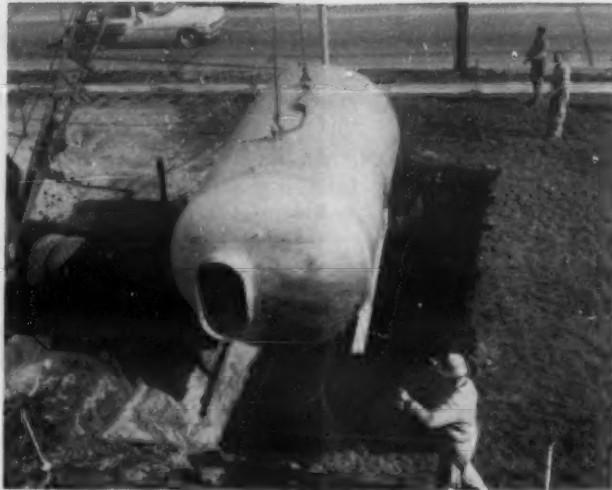
Why buy an old-fashioned truck and stand to take a licking at trade-in time? See your Chevrolet dealer for the most modern trucks money can buy. . . . Chevrolet Division of General Motors, Detroit 2, Michigan.

## NEW CHEVROLET Task-Force TRUCKS





THREE major components for the deluxe "Kidde Kokoon" H-bomb radiation and blast shelter include a 16-ft. tank 8 ft. in diameter, an access hatch and passageway and a portable gasoline-driven generator that provides power for the air-intake fan and for lighting.



INSTALLATION of the shelter can be accomplished in a day. The deluxe model shelter requires a hole 23 ft. long, 9 ft. wide, and 11 ft. deep. Three feet of earth form the protective covering atop the tank.



DELUXE MODEL is equipped with five bunks and air mattresses. At the rear of the tank is the fan which draws purified air through a special filter. The handle is used only in event of a power failure.

## 'Kidde Kokoon' H-Bomb Shelter

Tank Will Sustain Family as Long as Five Days  
By Providing Filtered, Non-Contaminated Air

GARDEN CITY, L. I., N. Y.—Walter Kidde Nuclear Laboratories, Inc. here has supplied details on the ventilation and filtering system in its widely-publicized "Kidde Kokoon" H-bomb radiation and blast shelters for large and small families.

The Kidde Kokoon is described as a "package" unit that requires no external connections and is capable of sustaining a family for three to five days

without outside assistance.

The three major components for the deluxe shelter include a 16-ft. tank 8-ft. in diameter, an access hatch and passageway, and a portable gasoline-driven generator that provides power for the air-intake fan and for lighting. In the event of a power failure, the fan can be turned by hand crank.

The deluxe model shelter requires a hole 23 ft. long, 9 ft.

wide, and 11 ft. deep. Three feet of earth forms a protective covering atop the tank. At this depth, the temperature inside the tank is relatively constant the year around, it was pointed out.

Exterior of the tank is treated against rust and is waterproofed. The steel used is  $\frac{3}{16}$  in. thick. The separately encased generator is buried adjacent to the tank.

### Chemical Filter Used

A major problem in the design of the shelter was the provision of sufficient non-contaminated air to sustain a family of seven for three to five days, the company noted. This was accomplished by using a special chemical filter which removes radioactive impurities, according to the firm.

James J. Byrnes of the privately-owned atomic research, development, and engineering concern gave this description of the ventilation and filtering system:

"The Kidde Kokoon is ventilated by a blower, electric motor operated, which draws 50 c.f.m. of air through the inlet air filter, providing four air changes per hour. The air exhausts from the shelter through the labyrinth entrance, the cover of which is made loose fitting for this purpose.

### If Power Fails

"Provisions are made for manual operation of the fan in the event of a power failure. The fan may be operated manually at rated capacity without overexertion. Minimal ventilation requirements are approximately a factor of 10 below the fan rating so that continuous

manual operation is not necessary.

"The inlet filter is of a type developed during World War II by the Chemical Warfare Service and has a filtering efficiency of 99.95% as measured with 0.3 micron DOP smoke particles.

"The filter, which is of the pleated type, is 18 in. by 18 in. by 6 in. and has a pressure drop of 0.3 in. water at the system flow of 50 c.f.m."

### Eliminates Filter Damage

Byrnes said that special precautions are taken to prevent damage to the filter during the overpressure portion of the blast wave that follows a bomb detonation.

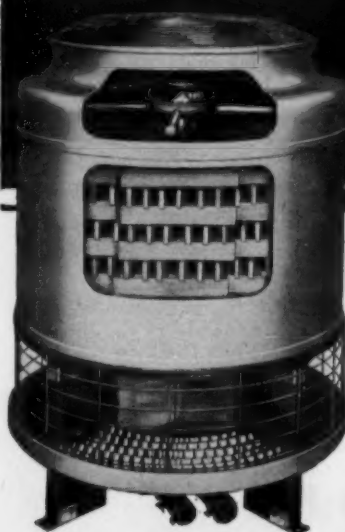
"The filter is protected by restricting the air inlet to the filter to provide a choking action so that the amount of air that can pass through this restriction at sonic velocity will not create sufficient pressure drop across the filter to rupture it," he explained.

"The filter will tend to concentrate the radioactive dust and as such must be separated from the shelter by sufficient earth shielding to limit the radiation reaching the shelter from this source. The filter is connected to the blower located

(Concluded on next page)

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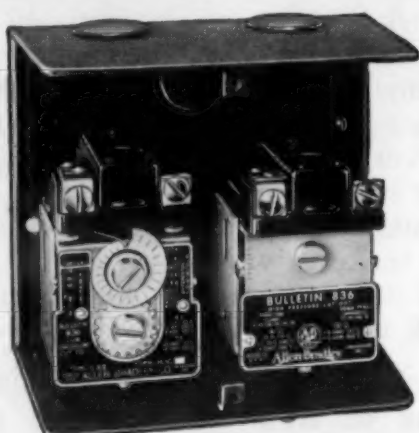


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Outdoor installation—safe for children or pets.  
Low height and vertical air discharge.  
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Mounted in one general purpose enclosure for a compact control installation.

### HIGH & LOW PRESSURE CUTOUTS

High pressure cutouts are safety devices to cut off power to compressor motors when the pressure goes above the safe limit.

Low pressure cutouts stop the motor when suction pressure is down to the desired level.

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**COOLING TOWER  
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With

**ASPIR-JET**

Aspir-Jet, the new spray nozzle, increases efficiency of cooling towers by increasing water break-up and improving water distribution. This is accomplished by the Aspir-Jet unique design which atomizes the water with as little as one-half pound nozzle pressure. Formed of butyrate plastic, Aspir-Jets last longer because they do not corrode. Thousands already in use are giving better cooling even with lower than normal pressures.

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of Curtis Manufacturing Company  
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Established 1854



## Bomb Shelter--

(Concluded from preceding page)  
inside the shelter by a 4-in. diameter iron pipe."

Alternate filters for chemical and biological warfare agents are interchangeable, the company noted.

### Equipped for Family

Describing a deluxe model shelter equipped with five bunks and air mattresses, the company said the "package" includes a radiation detector, an electric-battery radio, protective clothing, blankets, crowbar and shovel, first air equipment, a chemical toilet, and other apparatus and supplies needed to sustain a family.

"In addition to providing protection against blast damage in the zone that extends from three to 12 miles from an H-bomb," the company said, "the shelter will afford protection from radioactive fall-out particles in the danger zone extending up to 200 miles in the direction of prevailing winds from bomb zero."

"In this zone, unprotected people would receive uncomfortable doses of radiation within a short time and lethal doses if exposure is prolonged."

The large shelter which will house seven adults is now available for \$3,000 f.o.b. Garden City. Smaller models will sell "for as low as \$2,000" at local distributors, the firm stated.

## Bay City Dealers

### Set Up NARDA Chapter

BAY CITY, Mich.—A recent meeting of appliance dealers here resulted in the formation of a new local dealer group called the Bay County Appliance Dealers Association.

At the same meeting, the association voted to affiliate with the National Appliance & Radio-TV Dealers Association.

The officers of the association are: C. A. MacKenzie, Millar's, president; Elmer Partenfeller, Partenfellers, vice president; Don Couture, George F. Dent Co., secretary; and Ed Jaeger, Arctic Coal and Appliance, treasurer.

## Brewer-Titchener Names Shea Product Manager

CORTLAND, N. Y.—Patrick J. Shea has been appointed product manager for The Brewer-Titchener Corp.'s Refrigeration Div. He will be attached to the general sales manager's office.



P. J. Shea

Shea will serve Brewer-Titchener in a sales engineering capacity, with emphasis on the production and shipment of BTC refrigeration cabinets. He will work closely with customers, as well as assist in the development of new products.

Prior to joining Brewer-Titchener, Shea was employed for nine years by the Carrier Corp. as a sales engineer. He also was associated for five years with The Trane Co.

## Buffalo Firm Changes Name and Broadens Service Activities

BUFFALO—The Buffalo Automatic Washer Service Corp. has changed its name to the Buffalo Automatic Appliance Service Corp. and has broadened its service activities with appliance distributors in this area.

The former firm handled all Bendix laundry equipment service here for Pittsburgh Products Tri State Co.

Graybar Electric now has taken over the Bendix distributorship here and Buffalo Automatic Appliance Service now has taken over all service work on Crosley, as well as Bendix appliances, in this area, operating at 868 Niagara St.

The firm also is doing all service work on Admiral appliances and Hamilton laundry equipment for Faysan Distributors at 506 7th St.

Henry H. Barrie is president of Buffalo Automatic Appliance Service Corp. and Earl Marshant is secretary-treasurer.

## Revco Appoints Atlanta Distributor

DEERFIELD, Mich.—Peaslee-Gaulbert Corp., Atlanta, has been appointed a Revco distributor and franchised to sell the Revco "Bilt-In" refrigerator and freezer custom-combination, according to J. H. Overmyer, director of sales at Revco, Inc.

C. W. Helms, vice president at Peaslee-Gaulbert, reports his firm will cover the entire state of Georgia on the Revco Bilt-In line.

## Murray Deal--

(Concluded from Page 1, Col. 4)

what is left after the Murray agreement would be merged with Union Chemical & Materials Corp., Pittsburgh. The latter firm was purchased by Clint Murchison and Associates, of Texas, in 1953. Apparently, Union Chemical would take over Easy's defense work and its Syracuse plant.

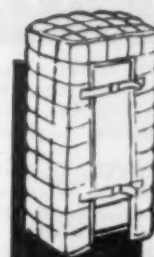
The proposed transaction with Murray is contingent upon the proposed merger with Union Chemical, according to W. Homer Reeve, Easy president. If both transactions are approved by stockholders, Easy's Syracuse plant would be operated by Union Chemical as its Syracuse division, with Reeve acting as division president.

Murray's president, B. C. Gould, said the proposal, if approved, would give his company an established organization to market nationally the home laundry products which it has developed and which are ready to go into production. The acquisition would be another move by Murray under its diversification program.

## Berdahl Appointed Connor Ad Manager

DANBURY, Conn.—Walter L. Berdahl has been appointed advertising manager of Connor Engineering Corp., manufacturer of ceiling air diffusers and activated carbon air purification equipment. Prior to joining Connor, he was assistant promotional art director of Famous Artists Schools, Inc. and also with Burndy Engineering Co.

## unmarred!



Air conditioning and refrigeration units are handled safely and efficiently — go to work unmarred — with ELKAY Moving Pads and Covers, Appliance Trucks, Dollies, Straps and Casters. Write for complete FREE CATALOG!

**ELKAY**

PRODUCTS CO.  
323-27 W. 16 St., N. Y. 11, N. Y. • WAtkins 9-1148

## CASH IN! on RITE COLD



The DRAFT BEER System that Controls Every Glass—

- THE TEMPERATURE
- THE FLAVOR
- THE COLLAR

A Complete Line of Direct Draws and Instantaneous Coolers for All Applications.

With RITE COLD—Beer Can Be Drawn Any Temperature Desired Regardless of Keg Temperature.

Exclusive Franchised Territories!

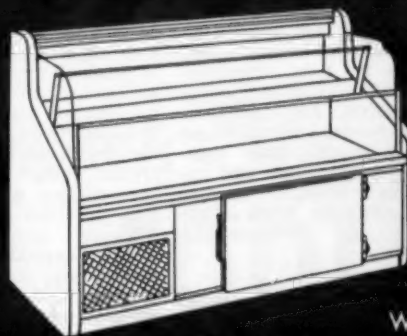
Write today for our illustrated catalog and complete information on our sensational portable demonstrator which sells RITE COLD Systems on sight!

**RITE COLD COMPANY**

DEPT. 111, 2038 WALNUT, ST. LOUIS 3, MO.

## SIX FEET OF SALES POWER

Self-Contained Case for Dairy Products, Meats, Vegetables



Here's a case that has a big market in crowded stores. Just 6' long... 18 square feet of refrigerated shelves... 13 cubic feet of storage... all in 18 square feet of floor space! Goes through the standard door; plug-in installation; reliable refrigeration. You can sell one of these a week!

WRITE FOR COMPLETE DETAILS.

85th Anniversary

**THE C. SCHMIDT COMPANY**

1712 JOHN STREET CINCINNATI 14, OHIO



## Fast Delivery COILS

TOP QUALITY  
EVAPORATOR  
CONDENSER  
WATER STEAM

1 TO 50 TONS 2 TO 8 ROWS

**Tubenfin COIL CO.**

8035 HARTFORD, HOUSTON 17, TEXAS

## Redmond MICROMOTORS

One of largest stocks  
in the world!

FACTORY DISTRIBUTORS  
MARVIN L. "FERGIE" FERGESTAD  
**CYCLO-FREEZ CORP.**  
6318 Cambridge, Mpls. 16, Minn.  
West 9-6794

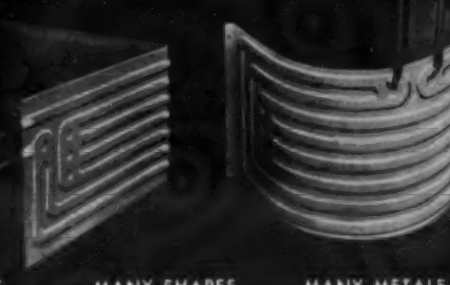
ELIMINATE  
PRODUCTION  
HEADACHES  
with



MANY SIZES

## DEAN GOLD PLATES

"JOB TAILORED"  
TO YOUR SPECIFIC NEEDS



MANY SHAPES

MANY METALS

WRITE FOR TECHNICAL DATA BOOK • ADDRESS DEPT. AC



**DEAN PRODUCTS, INC.**

1042 DEAN STREET, BROOKLYN 38, N. Y.  
STerling 9-5400



## CLASSIFIED ADVERTISING

RATES for "Positions Wanted" \$7.50 per insertion. Limit 50 words. 15¢ per word over 50.

RATES for all other classifications \$10.00 per insertion. Limit 50 words. 20¢ per word over 50.

ADVERTISEMENTS set in usual classified style. Box addresses count as five words, other address by actual word count. Please send payment with order.

### POSITIONS WANTED

**REFRIGERATION ENGINEER**—Desires position with reliable appliance concern interested in manufacturing a new-type portable air conditioner. Have prototype. Twenty-five years' experience in mechanical refrigeration, thermodynamics, and air-flow engineering. Patents pending on new components which will improve the cooling capacity and power factor of conventional air conditioners. For references or details, c/o MR. EARL GILD, 907 Fox Building, Detroit 1, Michigan.

**REFRIGERATION SERVICE** and installation technician desires position with reliable company. Will travel if necessary. Twenty years of experience on all types of refrigeration in service, sales, installations and especially low-temperature environmental test equipment. Age 46, nice appearance, good health, excellent character, nice personality, and best of references. Will relocate if necessary, but would like to stay in Ohio. Please write to CLYDE STONEKING, 807 E. Kenworth Rd., Columbus 11, Ohio.

DO YOU need a salesman to cover western Michigan? Background experience as salesman, sales management, field representative for manufacturer of air conditioning refrigeration equipment. Resume of experience upon request. Open for direct selling proposition but prefer dealer-distributor sales development. Your inquiry confidential. BOX A5275, Air Conditioning & Refrigeration News.

**RELIABLE, COMPETENT** man desires to make change. Excellent references and wide acquaintances. Fourteen years' experience with leading wholesalers and manufacturers of refrigeration, air conditioning and heating equipment, application, sales, purchasing and management. Free to travel and relocate. Will consider factory representation. BOX A5276, Air Conditioning & Refrigeration News.

**MANUFACTURER'S REPRESENTATIVE** wants additional active lines. Contacting refrigeration parts wholesalers in Texas, Louisiana, Oklahoma and Arkansas. Reply BOX A5277, Air Conditioning & Refrigeration News.

**ADVERTISING MANAGER** presently handling air conditioning (heating & cooling) company ad budget over half million dollars ready for greater opportunity in this challenging field. Four years' sales experience in industrial and commercial air conditioning, one year ad agency and four years' experience large company advertising and sales promotion department. B.S. in M.E. Age 34. Married. BOX A5278, Air Conditioning & Refrigeration News.

### POSITIONS AVAILABLE

**REFRIGERATION INSTRUCTOR** for either class or shop. Must have had teaching experience. Compensation depends on ability to teach or acceptance of responsibilities for organization. Permanent connection with chance

for advancement. State all qualifications in application. Write to HERCO TRADE SCHOOL, INC., 1245 N. High St., Columbus 1, Ohio.

**WONDERFUL OPPORTUNITY** for a serviceman to work with one of central Texas' largest and most progressive air conditioning companies. Must be well-qualified, above average in ability and personality. Good salary, share of profits and paid vacation. Permanent year 'round work. Contact immediately by mail for interview. THE KAY COMPANY, Waco, Texas.

**PRODUCER'S CHANCE**—Experienced salesman to sell market equipment. Qualified leads furnished. Top commissions. State qualifications. NELSON'S REFRIGERATION AND FIXTURES, 11733 Sherman Way, North Hollywood, Calif.

**MANUFACTURERS' REPRESENTATIVES** now covering Southern States, Texas or Midwest, contacting commercial refrigeration firms, to sell fast-growing line of special and standard commercial equipment. Write: PAUL R. STEWART, 1712 John Street, Cincinnati 14, Ohio.

**SALESMEN—CALLING** on locker plants: Selling our home freezers takes no more effort than selling saws, grinders, and general supplies. We ship direct to your accounts, the locker plant operators, who now lead all other outlets in sales. Generous commission structure—protected territories. TRI-STATE ELECTRIC MFG. CO., P. O. Box 836, Lima, Ohio.

**DISTRICT MANAGER** for Midwest—to headquarter in Chicago. Primary duty establishing new distributors and developing further sales through those already established. THE WARREN COMPANY, Box 1463, Atlanta 1, Georgia, established 1882, one of the country's leading commercial refrigerator manufacturers. Salary, incentive plan, expenses. Prefer experience in this field. State full background. WANTED: EXPERIENCED commercial refrigeration serviceman for service and installation work. Write giving experience and qualifications to WHITE DISTRIBUTING CO., 907 E. First St., Wichita, Kansas.

**WANTED CHIEF engineer**—Wonderful opportunity for advancement with fast-growing, aggressive manufacturer of fans and blowers. Will be in complete charge of design and development. Excellent opportunity for creative engineer. Plant located in progressive, modern, Midwest community. Staff knows of this ad. State experience and qualifications first letter. Reply to BOX A5207, Air Conditioning & Refrigeration News.

**MANUFACTURERS' REPRESENTATIVES** wanted—We have two excellent territories open: North and South Carolina; Alabama and Georgia. Complete line of packaged air conditioning products, both air-cooled and water-cooled, 2 to 30 tons. Competitively priced, liberal finance and warehouse plans, commercial air conditioners, residential year-round units, home conversion add-on units. Give complete details as to experience and industry references in first letter. Replies will be held in confidence. BOX A5269, Air Conditioning & Refrigeration News.

**NATIONAL MANUFACTURER** of residential, commercial, and industrial air conditioning equipment requires the services of a district service supervisor. Must have experience and good

knowledge of service management as well as technical knowledge of equipment and controls. Regular travel required. Reply BOX A5271, Air Conditioning & Refrigeration News. List age and experience record.

**MIDWESTERN REFRIGERATION** and air conditioning manufacturer needs an experienced service manager. Must be able to organize service department and handle field service. Must be familiar with air conditioning and refrigeration installations and equipment. Age range to 40. Salary open. Address replies giving full details of work history to BOX A5272, Air Conditioning & Refrigeration News.

**LARGE WELL-ESTABLISHED** refrigeration supply jobber requires young, outside sales specialist to take over sales territory in northern Ohio. Salary and expenses. A permanent connection for the right man. Write BOX A5273, Air Conditioning & Refrigeration News.

**REFRIGERATION DESIGN engineer**—strong knowledge of heat transfer, refrigeration components and shop practice for fabrication of refrigeration, air conditioning and air handling equipment. Location N.Y.C. Medium size, growing organization. Send resume and past earnings. BOX A5279, Air Conditioning & Refrigeration News.

**AIR CONDITIONING sales engineer** experienced in central plant systems wanted by established distributor in Philadelphia area. Excellent opportunity in expanding organization. Submit resume of education and experience. BOX A5280, Air Conditioning & Refrigeration News.

**PROJECT ENGINEER**—A large, well-known manufacturer of heating and cooling equipment located near Chicago is expanding its engineering staff and facilities, and seeks a responsible project engineer qualified to design residential air conditioning equipment. Our organization knows of this advertisement and your response will be held in strictest confidence. In replying, please include a resume of your background, experience and salary requirements. Reply to BOX A5281, Air Conditioning & Refrigeration News.

**SALES ENGINEER**—Leading manufacturer of year 'round air conditioning equipment with national distribution has opening for sales engineer well versed in all phases of heating and summer cooling. Must have experience in residential, commercial and industrial application, both forced air and boiler systems. Age preferably between 20 and 45 years. Must be willing to travel and relocate if necessary. When applying, give full resume of experience and qualifications, salary, commensurate with responsibilities. Our organization knows of this advertisement, your reply will be held in strictest confidence. Write BOX A5282, Air Conditioning & Refrigeration News.

**FIELD SERVICE engineer**, with 10 years' or more commercial refrigeration experience (preferably food store), is desired by manufacturer recognized as among the leaders in food store refrigeration equipment field. Must be free to travel and willing to move, if necessary, at our expense. Promotions create need for additional men in eastern and southeastern states. Position provides salary, expenses, car allowance, vacation with pay, insurance, hospitalization. Here's a real opportunity for a man 30 to 45 years. Replies held strictly confidential. Send recent photo with full particulars of experience to BOX A5283, Air Conditioning & Refrigeration News.

**SALES ENGINEER** for refrigeration supplies house in southern New England. A lucrative territory now open. We are seeking capable man to work with local accounts. Write giving qualifications, education, experience and expected income. Write BOX A5285, Air Conditioning & Refrigeration News.

**WANTED: DEVELOPMENT engineer**, automotive air conditioning firm, located in Southwest. Expanding into other fields. Require young, energetic, forward-thinking development engineers with B.S. degree or equivalent, preferably with experience in design, load calculations, systems, surface design, etc. State age, marital status, education, experience, include photograph. Send letter to BOX A5286, Air Conditioning & Refrigeration News.

**SALES ENGINEER** wanted. Age: 28 to 35. Must have manufacturing background, refrigeration experience preferred. Aggressive growing manufacturer located in western New York state will pay from \$9,000 to \$10,000 plus bonus. Man selected will have definite opportunity for advancement to executive position. Write sending full details and snapshot to BOX A5287, Air Conditioning & Refrigeration News.

### EQUIPMENT WANTED

**WANTED: YOUR surplus**, outdated or obsolete refrigeration items—expansion & water & shutoff valves, controls, relays, dehydrators, units, tubing, fittings, etc. All sales on a cash close-out basis, large or small quantity. Write or call: COMMERCIAL CONTROLS SERVICE CO., 257 East 3rd Street, N. Y. 9, N. Y. ORegon 3-7210.

**WANTED: ANY amount** Frigidaire relays, YG2 type. Will pay 25¢ each. Ship in and will mail check. UNITED CONTROLS, 342 West 70th Street, New York 23, N. Y.

**WE ARE interested** in purchasing any Ajax Electric Ice-man—new, used or parts. Contact BOX A5284, Air Conditioning & Refrigeration News.

### EQUIPMENT FOR SALE

**AUTOMOTIVE AIR conditioning units:** Name brands—complete kits in every detail. Compressors with or without clutch. Available to air conditioning and refrigeration company dealers—anywhere. Send letterhead for complete literature. Immediate delivery for most makes of cars and station wagons. Write: FULLER AUTOMOTIVE AIR CONDITIONING COMPANY, 990 Union Avenue, Memphis, Tennessee.

**HACO LOAD-VOLTAGE analyzers:** For predetermining voltage adequacy of electrical circuits intended for room air conditioner operation. For extremely valuable usage by contractors and dealers. Approved by leading manufacturers. Only \$34.80 each. Order from jobber or direct factory shipment. HEIGHTS AIR CONDITIONING CO., 3607 Hildana Avenue, Cleveland 20, Ohio.

**FRAND NEW 1955 models** completely automatic 110V. or 220V. Kesco condensate water disposal units for air conditioners at your jobbers. Famous flood-proof, trade accepted, low priced K-40 12 ft. head; K-55 17 ft. pump; available in deluxe heavy hot-dipped galvanized tank 9 1/4" high, 14" wide, 7" thick. Write for your nearest jobber; literature: KESCO PRODUCTS CORP., Box 84, Springfield Gardens 13, New York.

**BRAND NEW 3/4 h.p. open-type units** with two row condenser with thermotron type A Delco motor 115 V. 60 cycle. Complete in original crates Model O, each \$42.50, 45 pcs. Also nationally-known 1 h.p. motors 220/440 V. 3 ph. 60 cycle 1725 r.p.m., heavy-duty 203 frame, \$39.50 new in original crates. General replacement household controls type RJ dial plate & knob 25" capacity 15 degrees to 28 degrees, new in carton, \$2.25 each. 9" industrial thermometers 40 minus to 110 F. mercury fill, new in cartons, each \$3.95. Full satisfaction or refund. Prompt shipment. R. & R. EQUIPMENT COMPANY, 2724 Third Ave., Bronx 54, N. Y.

**REFRIGERATION VALUES:** Attention servicemen; send for our catalog of refrigeration parts; savings up to 50%. WALTER W. STARR REFRIGERATION SUPPLIES, 2833 Lincoln Ave., Chicago 13, Illinois.

**STEAM COILS:** Prominent brand new in original crates. Type S.D.O. Suitable for modulating or on, off steam controls. 24" x 96", 8 fins per inch, 12 each—one and two row. 40% off wholesale cost for quick sale. Additional discount for 24 lot. Write P. O. BOX 207, Gadsden, Alabama. Phone 6-0441.

**COLD STORAGE room:** Federal sectional type 6" Fiberglas insulation for temperatures to -5°F. 2 each size 60'-0" x 10'-6" x 9'-6". Used, in good condition. Complete with condensing units, freezer plates, blower coils, 8 freezer type doors. And other accessories. Will sacrifice. Write P. O. BOX 207, Gadsden, Alabama. Phone 6-0441.

### Dallas Church to Get Year-Round System

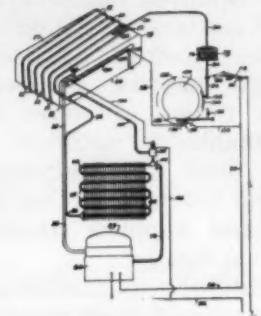
DALLAS, Texas—Chaney Air Conditioning Co. here has completed the installation of Frigidaire year-round air conditioning at the Mount Auburn Church of Christ.

"All supply ductwork is interlined with acoustic material to reduce the noise level to a minimum," said Vince Kavanaugh, Chaney sales manager.

## PATENTS

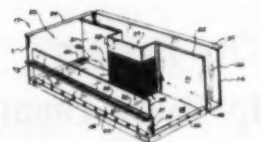
Week of May 17  
(Continued)

**2,706,348. DEFROSTING MEANS FOR REFRIGERATING APPARATUS.** Lawrence A. Philipp, Detroit, Mich., assignor to Nash-Kelvinator Corp., Detroit, Mich., a corporation of Maryland. Application Nov. 2, 1951, Serial No. 254,466, 4 Claims. (Cl. 62-4.)



1. Refrigerating apparatus comprising a motor-compressor unit, a condenser, a refrigerant evaporator having a liquid accumulator vessel at its outlet that contains liquid refrigerant during normal operation, supply means for conducting liquid refrigerant from said condenser to said evaporator, bypass conduit means between the compressor and evaporator for conducting hot gaseous refrigerant directly from the compressor-unit into the inlet of said evaporator during operation of said unit, heating means adjacent said vessel for applying extraneous heat to the liquid refrigerant in said vessel of said evaporator only during the operation of said unit and the flow of hot gaseous refrigerant directly to said evaporator, and conduit means for conducting gaseous refrigerant from said evaporator to said unit.

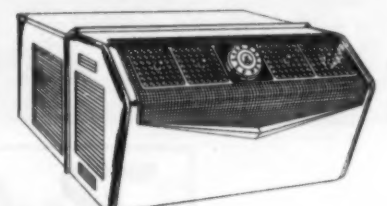
**2,706,349. FROZEN FOOD CABINET.** Fred J. Kuhn, Detroit, Mich. Application Nov. 19, 1953, Serial No. 393,039. 8 Claims. (Cl. 62-89.5.)



1. A frozen food cabinet comprising a hollow rectangular shaped box with a partially open top, including hollow insulated front, rear, end and bottom walls and a canopy defining a storage compartment, an upright partition parallel to and forward of said rear wall defining an upright return air chamber bounded by said canopy and bottom wall, an upright screened housing communicating with said chamber and projected forwardly thereof centrally of said compartment and bounded by said bottom wall and canopy, a refrigeration coil within said housing, a blower fan in said chamber rearwardly of said coil, an upright partition parallel to and rearwardly of said front wall defining a second return air chamber bounded by said bottom wall and communicating at its upper end with the interior of said compartment, and a pair of parallel spaced air ducts upon said bottom wall along the interior of said end walls with the respective front ends of said ducts communicating with said second return air chamber at its opposite ends, and with the rear ends of said ducts communicating with said first return air chamber at its opposite ends.

### DESIGNS

**174,728. AIR CONDITIONER.** Leonard Ashbach, Chicago, Ill., and Lionel Marks, New York, N. Y. Application July 12, 1954, Serial No. 31,396. Term of patent 14 years. (Cl. D62-4.)



(To Be Continued)

### New View for Fairview

ERIE, Pa.—Fairview Electric has moved to a new and larger location at 351 W. 26th St. The new showroom has 50,000 sq. ft. of floor space, conveniently arranged for inspection of appliances.

**NOLIN**  
*Leads the Field*

**New Dry Beverage Cooler**

- LEADS IN CAPACITY
- LEADS IN QUALITY
- LEADS IN PERFORMANCE
- LOWEST IN PRICE

**NOLIN MANUFACTURING COMPANY**  
1400 LLOYD ST. PH. LD. 57  
MONTGOMERY, ALABAMA



# Government Contracts

## GENERAL SERVICES ADMINISTRATION

Description	Quantity	Reference No.	App. Bid Date
General Services Administration, Business Service Center, Region 5, 575 U. S. Courthouse, 219 S. Clark St., Chicago, Illinois	Electric water coolers, Fed. Spec. 598 ea.	IFB CHN-1510	14 Jul 55
General Services Administration, Business Service Center, Region 8, Bldg. 41, Denver Federal Center, Denver 2, Colorado	Air conditioning personnel office, Job (PROJECT NO. 334)		15 Jul 55
Boulder Laboratories, Nat'l. Bureau of Standards, Boulder, Colo.			

## CONTRACTS AWARDED THROUGH JULY 1, 1955

Department of the Navy, Bureau of Ships, Washington 25, D. C.  
Chilled water cooling coil, -321 ea.; Chilled water unit cooler (IFB-600-924-55-S), -45 ea. \$216,696.—McIntyre Engineering Co., Inc., South San Francisco, California.

Quarters, Wright-Patterson AFB, Ohio  
Furnishing and installing heating and air conditioning to bldg. T-288.—Job, \$34,400.—Hughes Simonson, Inc., 20 N. McGee St., Dayton, Ohio.

Public Works Office, Eleventh Naval District, San Diego 32, California  
Construction of dehumidified warehouses at the U. S. Naval Construction Battalion Center, Port Hueneme, California. NOY86700.—Job, \$1,156,419.—L. D. Richardson & Co., 9437 Santa Monica Blvd., Beverly Hills, California.

Commanding Officer, New York QM Market Center, Third Ave. and 29th St., Brooklyn 32, New York  
Refrigerated storage space and facilities for use as an assembly and distribution point (30-079-QM-55-1).—Job, \$93,950.—Seaboard Terminal and Refrigeration Co., 215 Coles St., Jersey City, N. J.

Ordnance Corps, Redstone Arsenal, Huntsville, Alabama  
Chamber temperature test, with test compartment size 4'0" wide x 4'9" high x 4'0" long.—2 ea., \$22,297.—Cook Electric Co., 1457 Diversey Parkway, Chicago 14, Illinois.

Chamber temperature test, with test compartment size 4'0" wide x 4'9" high x 8'0" long. CS No. 81-55 and 82-55.—2 ea., \$26,417.—Cook Electric Co., 1457 Diversey Parkway, Chicago 14, Illinois.

Corps of Engineers, U. S. Army, Office of the District Engineer, Fort Worth District, 100 W. Vickery Blvd., Fort Worth, Texas  
Cold storage and meat cutting plant, Carswell Air Force Base, Fort Worth, Texas. (Inv. No. ENG-43-43-55-162).—Job, \$193,708.—Stanford Construction Co., P.O. Box 11082, Fort Worth, Texas. Electrical, plumbing, heating, mechanical and related items, roofing, roads and utilities, structural steel, painting, plastering, ceramic tile, masonry and sheet metal.

Yards & Docks Supply Office, Port Hueneme, California  
Frozen food cabinets for use in quarters in Guam.—300 ea., \$45,450.—Revco, Inc., Deerfield, Michigan.

General Services Administration, 50 Seventh St., N.E., Peachtree-Seventh Bldg., Atlanta, Georgia  
Installing new air conditioning units on second floor, U. S. Post Office and Court House (Old), Atlanta, Georgia.—Job, \$16,286.—Mechanical Specialties, Inc., 92 14th St., N.E., Atlanta, Georgia.

Commanding Officer, Fort McPherson, Georgia  
Complete installation of one 3 ton, two 7½ ton, one 10 ton, and one 15-ton package air conditioning units in Bldg. 1425, Ft. McPherson, Ga.—Job, \$31,287.—A. G. N. Contracting Eng., Inc., 913 Blvd., Atlanta, Ga.

Office in Charge of Construction, Bureau of Yards & Docks Contr., 9th Naval District, Bldg. 1-A, Great Lakes, Illinois  
Construction of steam distribution systems and heating system modifications at the Naval Air Station, Hutchinson, Kansas. NOY-86016.—Job, \$276,928.—Davidson Plumbing Co., 301 Laura Ave., Wichita, Kansas.

## Pyle-National Expands Its Multi-Vent Div.

CHICAGO—Completion of expanded plant facilities and a broadened sales operation for the Multi-Vent Div. of Pyle-National Co. here were announced recently by William C. Croft, president.

The division makes low-velocity air diffusers for comfort air conditioning.

"Multi-Vent consists of perforated ceiling panels, which discharge conditioned air straight down into the room at a low velocity through thousands of little holes spread over a large area," it was explained.

Croft pointed out that Multi-Vent's expansion represents the culmination of 10 years of research and production planning. Through this expansion of facilities and with the enlarged sales staff for a concentrated sales drive in all marketing areas, the division is now in the position of providing better sales and technical service.

Included in new plant expansion are new production equipment, expanded research facilities, and additional warehouse space.

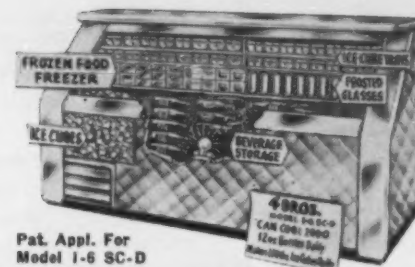
## Servel Factory Branch Opens In Northern Ohio

CLEVELAND — Establishment by Servel, Inc. of a factory branch to distribute Servel appliances in northern Ohio and appointment of Bert Cole to head the branch operation were announced recently.

The branch is located at 1192 East 40th St. in quarters formerly occupied by Progressive Appliance Co., former Servel distributor in the area.

Cole has been regional sales manager for Servel in the New York area.

Bert Brown, formerly service manager for Progressive Appliance, will continue in the same capacity with the Servel branch.



## 4-BROS. New 1955 All-Purpose 5-IN-1 ICE CUBE MAKER & Comb. BEVERAGE COOLER

1. Makes 250 lbs. ice cubes daily. 2. Cools 2000 12-oz. bottles daily. 3. Frost glasses shelf or freezer, 25° F. 4. Storage ice cubes or cocktail bottles. 5. Defrosts automatically. 6. Ease-Out trays. 7. 5-YEAR Factory Warranty on unit. 8. Gleaming #430 Stainless steel interior and exterior.

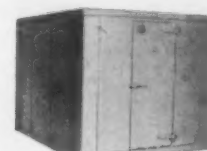
Sizes: 4 to 10 Ft. Long, 27" W., 39" H.

## 4-BROTHERS REFRIGERATION MFG. CO.

1423-31 SOUTH 8TH ST., PHILA. 47, PA.  
Exclusive Franchises available to dealers.



Direct Draw Refrigerated Faucets



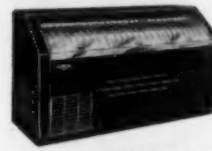
Metal Walk-In Cooler



Cubemaker



Upright Low Temperature Freezer



La Crosse Self-Contained Bottle Cooler



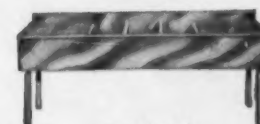
Bluebird Bottle Cooler-Remote



Reach-In Cooler



Supreme Milk or Bottle Cooler



Drainboard

DESIGN...  
ECONOMY..  
EFFICIENCY..

THE COMPLETE  
LINE FROM  
LA CROSSE  
HAS THEM  
ALL!

WRITE TODAY FOR  
COMPLETE INFORMATION

## LA CROSSE COOLER COMPANY

Factory and Gen'l Offices: 3000 Losey Blvd., S., La Crosse, Wis.  
Export Office: 80 Broad St., New York City. Cable Address: Eximport.

## PRESSTITE Insulation Adhesives

- quick, permanent adhesion
- long-lasting high bond
- excellent resistance to temperature extremes
- brush, spray or flow

See your wholesaler or WRITE

PRESSTITE ENGINEERING CO.  
3774 CHOUTEAU AVE. • ST. LOUIS 10, MO.

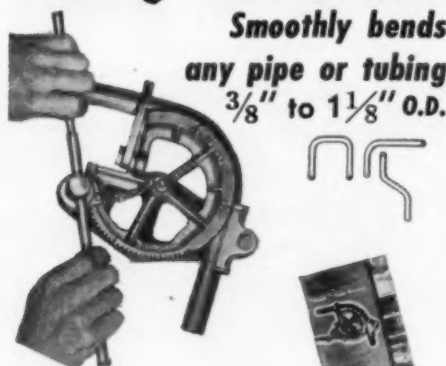
## Manufacturer's Representative Wanted in Chicago Area

Bally Case and Cooler Company wants manufacturer's representative who makes his headquarters in Chicago area.

Require high-type man with experience; currently active in refrigeration industry. Excellent volume of business presently enjoyed from number of active distributors—good opportunity for substantial earnings.

Bally Case and Cooler Company, Bally, Pennsylvania

## Handy Tube Bender



Smoothly bends  
any pipe or tubing  
3/8" to 1 1/8" O.D.

Just a twist of the wrist assures perfect, even, right-angle, U and offset bends. Save enough on ONE job to pay for your HANDY TUBE BENDER.

See your supply house—or write for free folder today.

## HOLSCLAW BROS., INC.

428 N. WILLOW RD.—EVANSVILLE, INDIANA

## KRAMER

# COOLMASTER

The Superior  
Product  
Cooler

5 SIZES  
10,000 to 60,000  
BTU's

## For EXTRA LARGE CAPACITIES

Ceiling mounted, you save valuable floor and storage space. Easier to install and service, too. Built-in Heat Exchanger.

WRITE FOR CATALOG R-230

KRAMER TRENTON CO. • Trenton 5, N.J.



## Heat Wave--

(Concluded from Page 1, Col. 5) terms of producing a healthy influx of orders from distributors in all markets, reports George Foerstner, Amana's executive vice president.

Foerstner said Amana's '55 room air conditioner business would double that of '54, and that demand is greatest for the larger capacity room units.

Worthington Corp. reported an increase in orders a few days after the start of the heat wave, and said that there was a possibility of some shortages in air-cooled equipment. Sales generally are well ahead of last year, it was stated.

Speaking for York Corp., J. K. Loudon, vice president, stated that the "very definite increased sales activity at the retail level in the past week" was beginning to make itself felt at factory headquarters. While there was no "general" shortage of units reported by York distributors, the official stated that some evidence of spotty shortages at the retail level were beginning to appear.

### N. Y. Reports Boom In Room Unit Sales

NEW YORK CITY—Sales of room air conditioners are booming in New York City—thanks to a prolonged heat wave—as they haven't had for two years.

An official of Thermodyne Corp. said the company sold 1,000 air conditioning units in two days last week. Up to now this year, that would be a normal four weeks' sales volume, he said.

Warren Connolly, Vornado distributor, reported a complete sell-out of units.

It is generally felt that this situation will be an added jab to manufacturers in attempting a better year-long promotion such as Christmas promotion, early buying, etc.

Room air conditioner advertisements show that units are still being offered at well under list prices. However, some of the chain-store ads were of the "come-on" type, with a listing of low prices being followed by the advice: "Not all models at all stores."

Several industry sources contacted by the NEWS stressed that while low prices still prevail, dealers with their own service facilities or good connections were getting business away from price-cutters because the former can install units in a couple of days and the latter can not.

Consumers seem to be willing to pay proportionately more in order to insure installation during the hot spell, it was pointed out.

### Chicago Sales Break Wide Open

CHICAGO—The Fourth of July heat wave broke air conditioner sales wide open here, a quick survey of distributors reveals. But no major shortages have yet shown up.

"There's nothing wrong with air conditioning business that

Old Sol can't cure," chortled Contractor Tom Reedy of Northtown Refrigeration Corp. He reported that business was booming. He said that there were no shortages to his knowledge, though installation crews are falling behind. That is the problem now, he noted.

Jack Zink of Appliance Distributors, Inc., Admiral distributor, said that the heat wave has done everything for business. "Dealers are very happy and the situation is very satisfactory," he declared.

"Dealers are reordering like mad and we have had to reorder twice from the factory. The second reorder is in anticipation of a continuation of the current hot spell for a few more days and in expectation of another hot spell later in the month.

"Some dealers report that they haven't had enough salesmen to handle all their cus-

tomers. Those fortunate enough to stay open last Saturday and Sunday did nothing but business.

"No shortages have developed but the sales boom has taken up the slack in their inventories."

Robert Wineman, York distributor, found "business has picked up quite a bit, although it would have been much better if the heat wave had hit sometime in June.

"However, this is taking up much of the carryover of old stocks and that will help us later on.

"No shortages have developed," he commented, "except on a few models and these were easily replaced."

The regional manager for one of the country's biggest cooling equipment firms said he was busy trying to get merchandise from other parts of the country.

## Steel May Up Appliance Prices--

(Concluded from Page 1, Col. 2) practically all steel products except tin plate. The latter is priced on a semiannual basis and cannot be changed before October. The price increases amounted to about 5.8%, although the wage advances granted came to 7½%.

Commenting on the steel price hikes, C. K. Reiger, vice president of General Electric Co. and general manager of its Major Appliance Div., said factory prices to wholesalers "will most likely reflect an increased cost." He added: "Normally an increase in factory prices also would be passed."

A Tracy Kitchen spokesman stated: "The figure looks like more than we can absorb. That obviously means selling price will be affected. Our increases

will correspond with dictates of increased costs and what the market will competitively permit."

Some indication of what the steel price boosts could mean in higher appliance production costs is the estimate that roughly ten major appliances can be made from a ton.

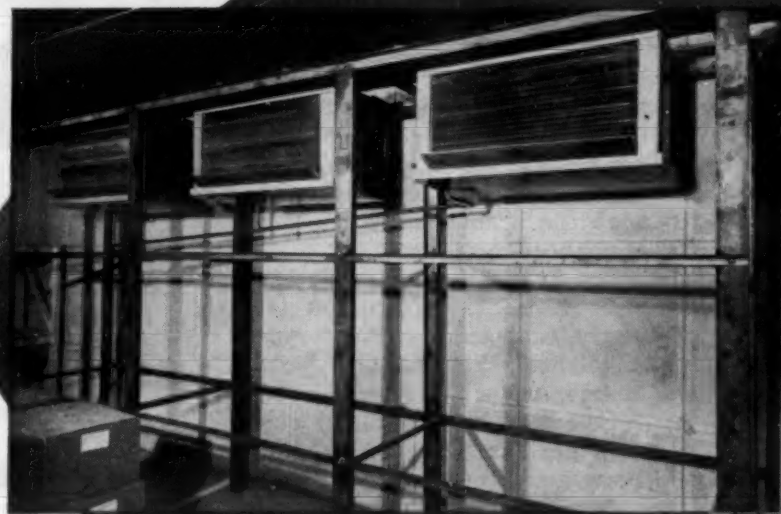
It has been pointed out too that costs of manufacturing appliances would be boosted not only by increases in the price of raw steel but also by probable hikes of components other than "wrap-around" sheet steel.

### Deepfreeze Distributor

MEMPHIS — Tom Holloway Distributing Co. here has been named distributor of Deepfreeze refrigerators and freezers in the Memphis trade area.



## BUSH HG UNITS CHOSEN TO CHILL NEW FROZEN FOOD WAREHOUSE



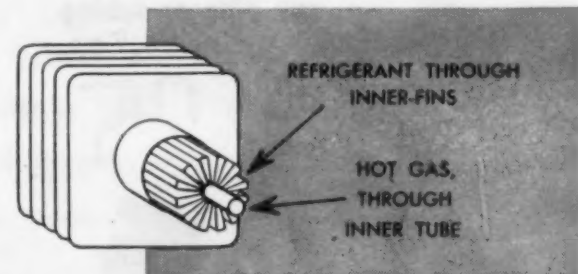
Bush 'HG' Hot Gas Defrost Unit Coolers refrigerate both the main storage area and "pickup" room of this modern Associated Grocers' frozen food warehouse in Pittsburgh.



Each 'HG' unit cooler is actually *two units in one*. Inner-Fin coil design—exclusive with Bush — combines evaporator and re-evaporator in a single unit. No reboilers, storage tanks or other complicated "extras" are required.

Units defrost *from the inside*. Inner-Fin design assures rapid distribution of heat to the area where frost forms. Thus, defrosting is quick and complete . . . room temperature rise is held to a minimum.

Write for catalog #835 containing complete information on new Bush line of low temperature equipment.



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